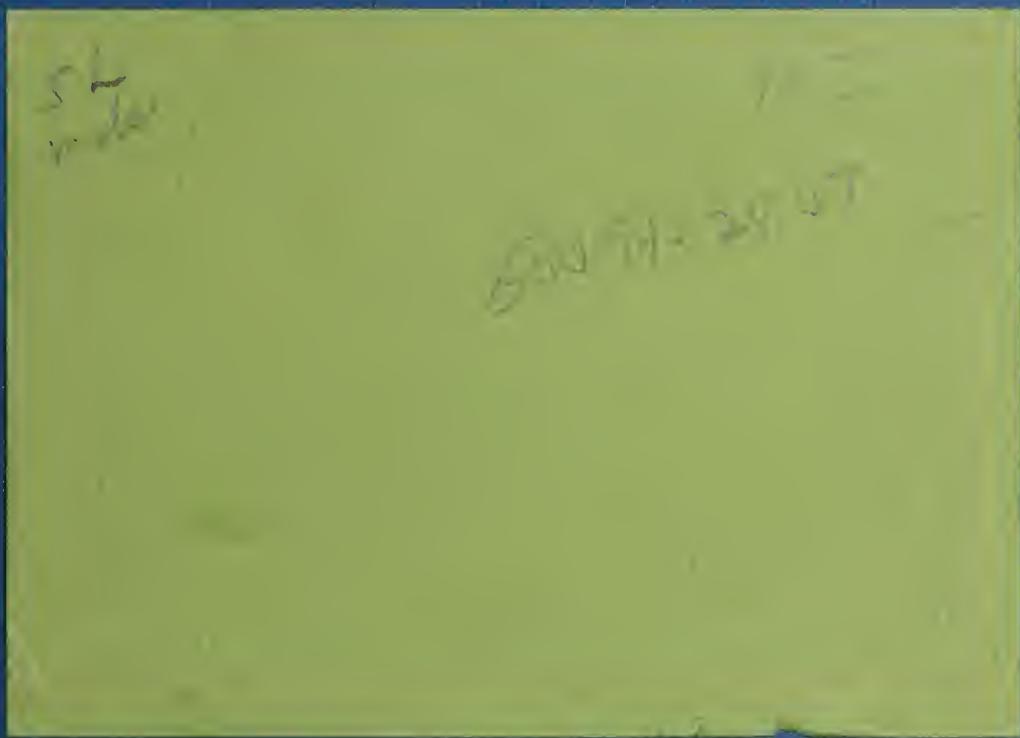


BOSTON PUBLIC LIBRARY



3 9999 07936 908 6



HC 108. B65A5



Copy 12

GIVEN BY

City Planning Board

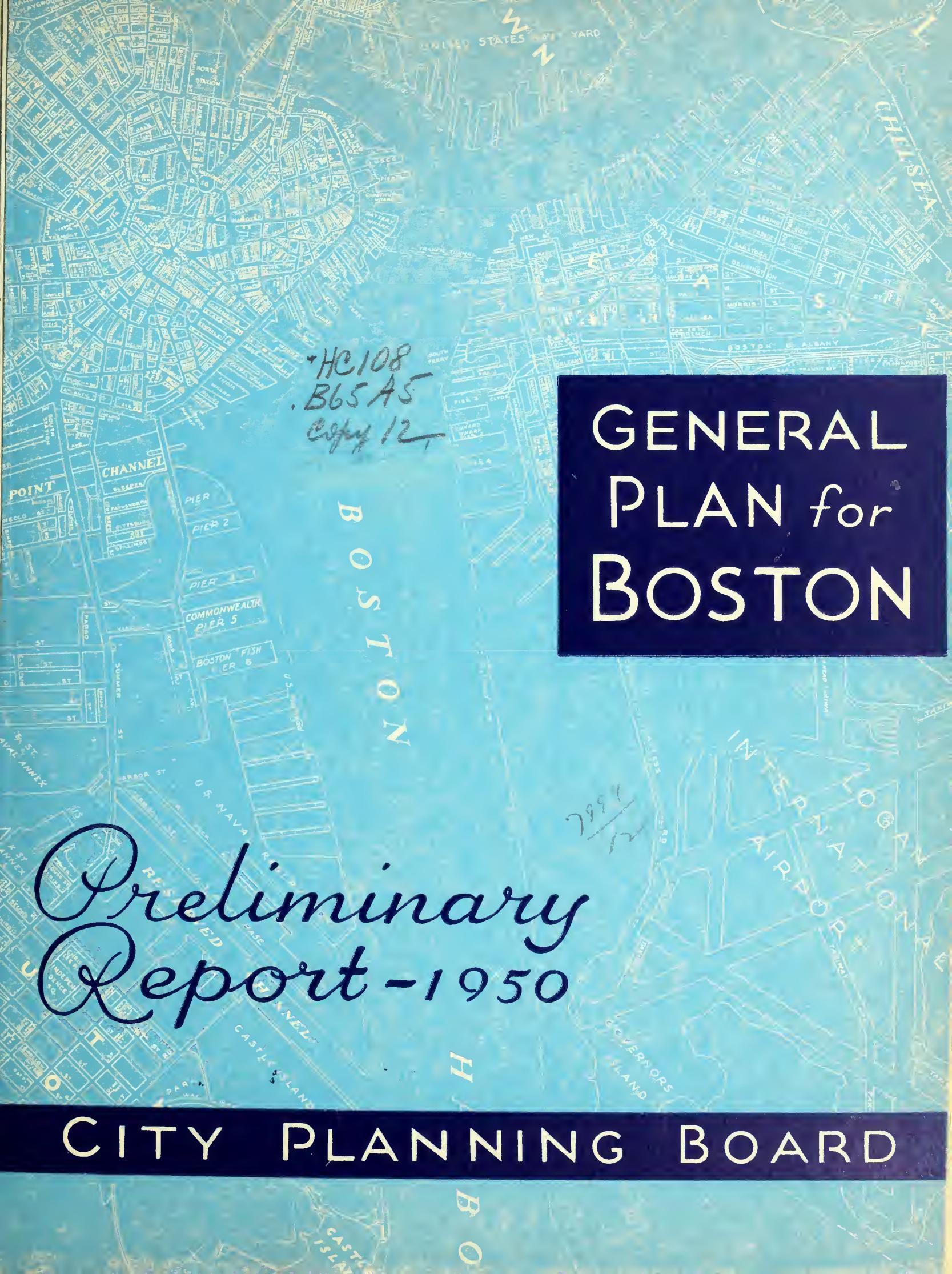
Other copies in RLS

& Fine Art

Digitized by the Internet Archive  
in 2015

<https://archive.org/details/generalplanforbo00bost>

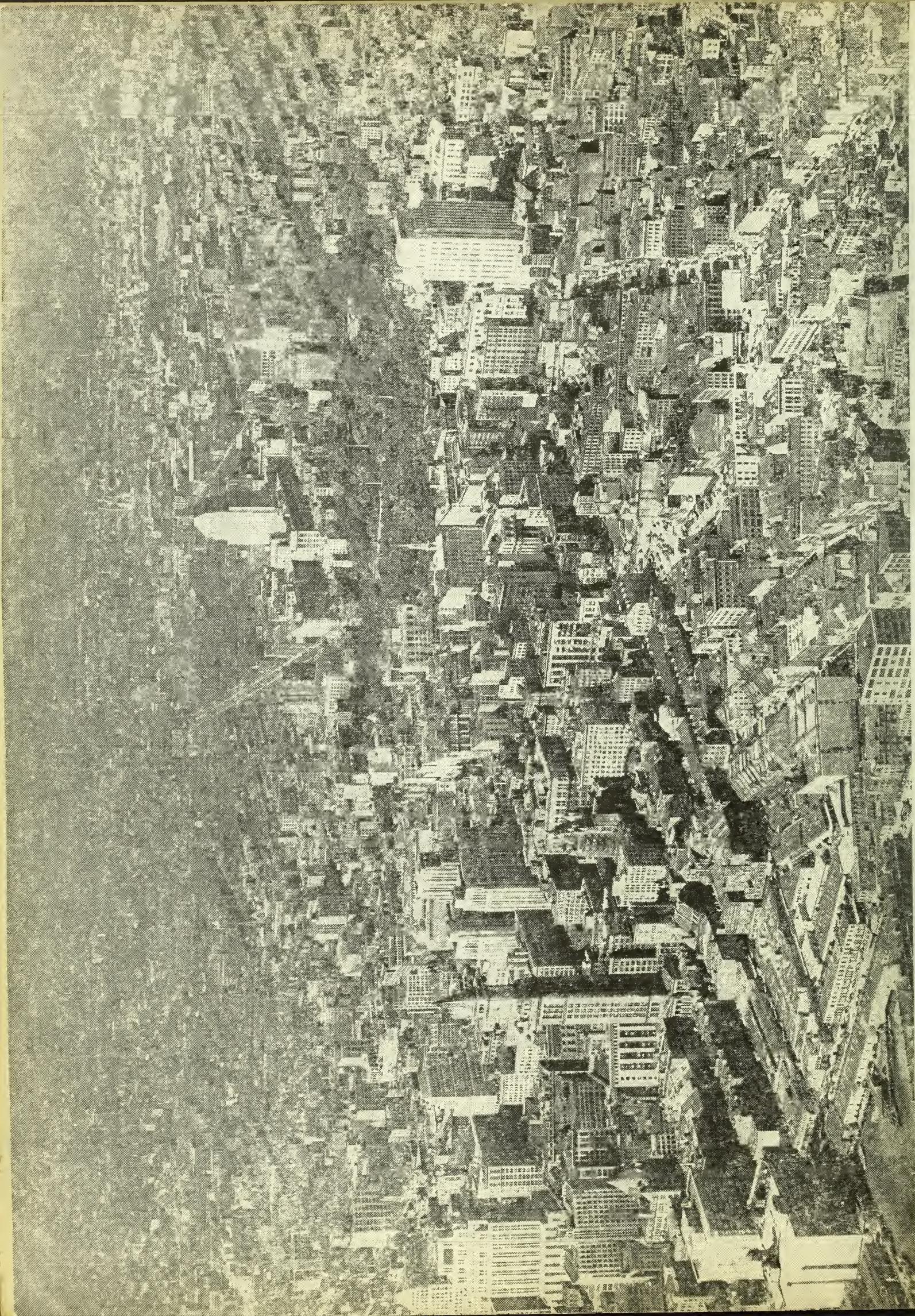




# GENERAL PLAN for BOSTON

*Preliminary  
Report - 1950*

CITY PLANNING BOARD



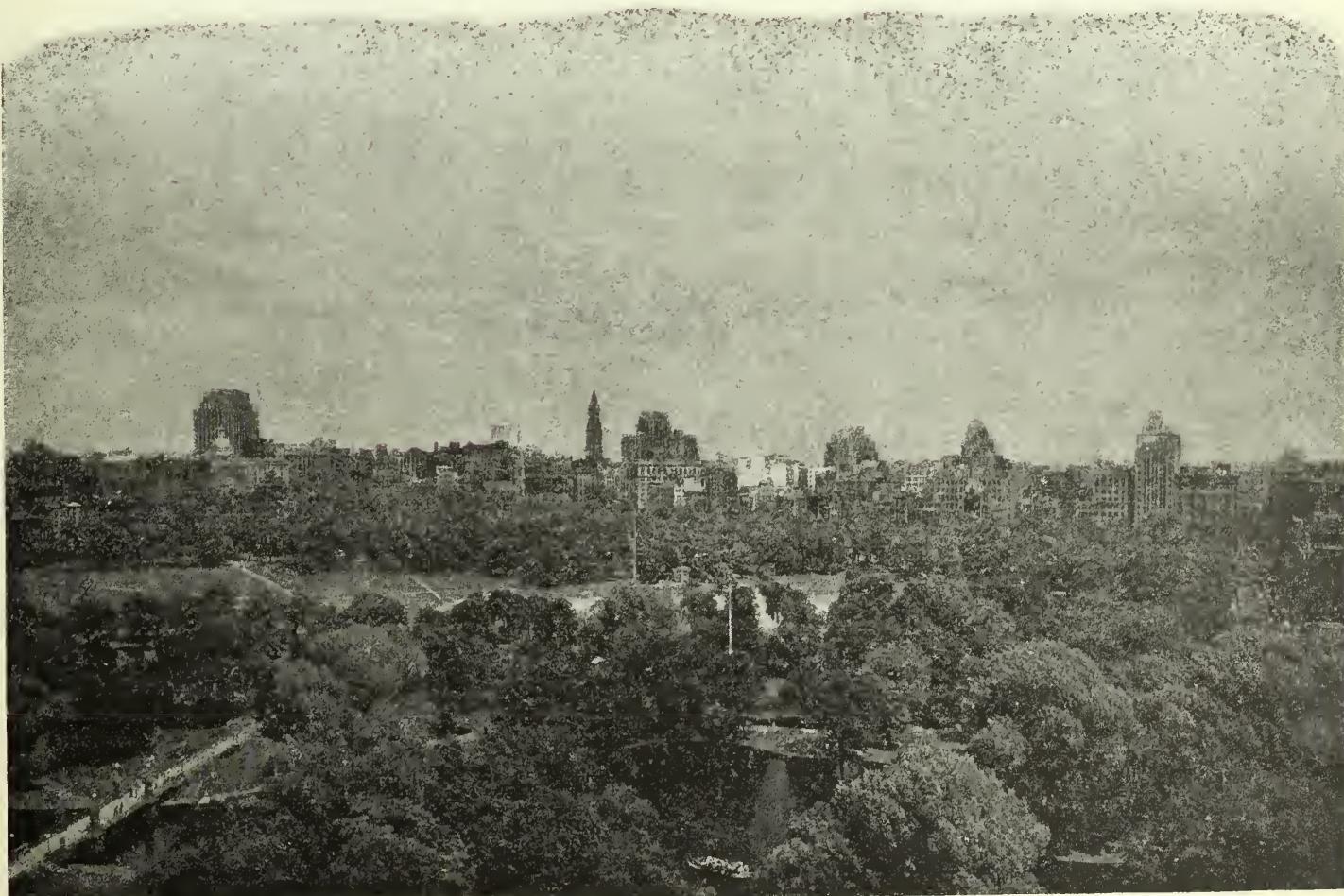
# GENERAL PLAN

FOR

## BOSTON

PRELIMINARY REPORT  
CITY PLANNING BOARD

DECEMBER, 1950



Fay Photo Service





THOMAS E. MCCORMICK  
EXECUTIVE DIRECTOR

MARY T. DOWNEY  
SECRETARY

OFFICE OF  
THE CITY PLANNING BOARD  
43 City Hall  
BOSTON 8, MASS.

September 20, 1951.

\* HC108  
B65A5  
Copy 12

Honorable John B. Hynes,  
Mayor of the City of Boston

Your Honor:

I am privileged to transmit herewith, on behalf of the City Planning Board, a "Preliminary Report on a General Plan for Boston".

This study was undertaken by direction of Your Honor, and upon your recommendation a special appropriation in addition to our regular budget was made available under date of February 21, 1950. The work was immediately gotten under way and intensively prosecuted over a period of about fifteen months.

The need for a general plan has long been recognized by the Board and has been given greater urgency by the National Housing Act of 1949. This law makes the Federal Government a working partner in the redevelopment of deteriorated city areas but also requires that there be a finding of conformity with a general plan for the community as a whole. The Planning Board believes that its work will help to qualify Boston for participation in the national program.

Upon reading the report it will become apparent to you, and to the public, that this is but the first step in a much larger program, and that to carry it to completion requires more time, more work, and more funds. The Board trusts that you will agree, however, that such completion is not only desirable, but under present conditions, -- social, economic, and military, -- really imperative.

The present report has been prepared with benefit of the services of the firm of Adams, Howard, and Greeley, Planning Consultants, and of Miss Elisabeth M. Herlihy, member of the Planning Board, who reviewed the entire text, offering many valuable suggestions. The Board is grateful to them and to the members of its own staff, who have given generously of their time and efforts in order that this first step in the larger program should be comprehensive, constructive, and complete.

Sincerely yours,

*Thomas F. McDonough*  
Chairman



CITY OF BOSTON  
OFFICE OF THE MAYOR  
CITY HALL

JOHN B. HYNES  
Mayor

September 27, 1951

Mr. Thomas F. McDonough, Chairman  
City Planning Board  
43 City Hall  
Boston, Massachusetts

Dear Mr. McDonough:

I am happy to acknowledge receipt of the City Planning Board's "Preliminary Report on a General Plan for Boston" and to express my sincere interest and appreciation.

I have always believed that wise planning is essential to orderly municipal progress. In my inaugural address of January 2, 1950, therefore, I stated that I would issue instructions for the immediate drafting of a master plan for Boston, showing the improvements and changes of all kinds that are contemplated by any public agency. This was done and a modest appropriation was made available to carry on the study. As you know, I have sought in every way I could to lend encouragement to the progress of the work.

I understand that only the essential or key planning elements are dealt with in this report, leaving refinements to be studied and detailed progressively as the work continues. I shall be glad to continue to cooperate with you to that end, with the hope that the final result will be comprehensive, practical, and progressive in its relation to the needs and resources of the community. For this purpose I believe the Plan, at all stages, should be coordinated with the capital improvement program which you have already underway.

However necessary it may be to postpone certain projects because of financial or other reasons, there should be no deferment of planning. In expressing my appreciation to you and to the other members of the City Planning Board, to the consultants and to the members of the staff who participated in the present work, I bespeak, on behalf of the City and its citizens, a continuation of their whole-hearted interest and assistance.

Sincerely yours

*John B. Hynes*  
Mayor

# CITY PLANNING BOARD

## BOSTON, MASS.

---

### MEMBERS

THOMAS F. McDONOUGH, *Chairman*

JOSEPH A. MITCHELL, *Vice-Chairman*

SAMUEL G. FISH

ELISABETH M. HERLIHY

MARY M. FITZGERALD

FRANCIS X. LANE

FRANCIS M. FONSECA

THOMAS F. McGOVERN

THOMAS J. TURLEY

### PERMANENT STAFF

THOMAS E. McCORMICK, *Executive Director*

MARY T. DOWNEY, *Secretary*

JEAN ELBERT BARIL, *Planning Engineer*

SYDNOR F. HODGES, *Senior Planner*

M. WALKER WALLACE, *Senior Planner*

PETER H. NASH, *Principal Planning Assistant \**

GRISWOLD TYNG, *Planning Illustrator*

FRANK J. BOUTELL, *Senior Planning Assistant*

ROBERT G. DAVIDSON, *Senior Planning Assistant*

LEON POLLARD, *Senior Planning Assistant*

STANLEY B. GOLDBERG, *Junior Planning Assistant*

ARCHIE V. PASKELL, *Junior Planning Assistant*

ANNE C. KELLY, *Hearing Stenographer*

MARY F. O'REGAN, *Librarian Stenographer*

### TEMPORARY STAFF

ALAN McCLENNEN, *Assistant Planner*

REGIS J. HARRINGTON, *Senior Planning Assistant*

NEWELL MITCHELL, *Junior Planning Assistant*

WALTER J. MONASCH, *Junior Planning Assistant*

JOSEPH TAMSKY, *Junior Planning Assistant*

JOHN J. BUCKLEY, *Junior Analyst*

MARGARET E. TIERNAN, *Clerk and Typist*

### CONSULTANTS

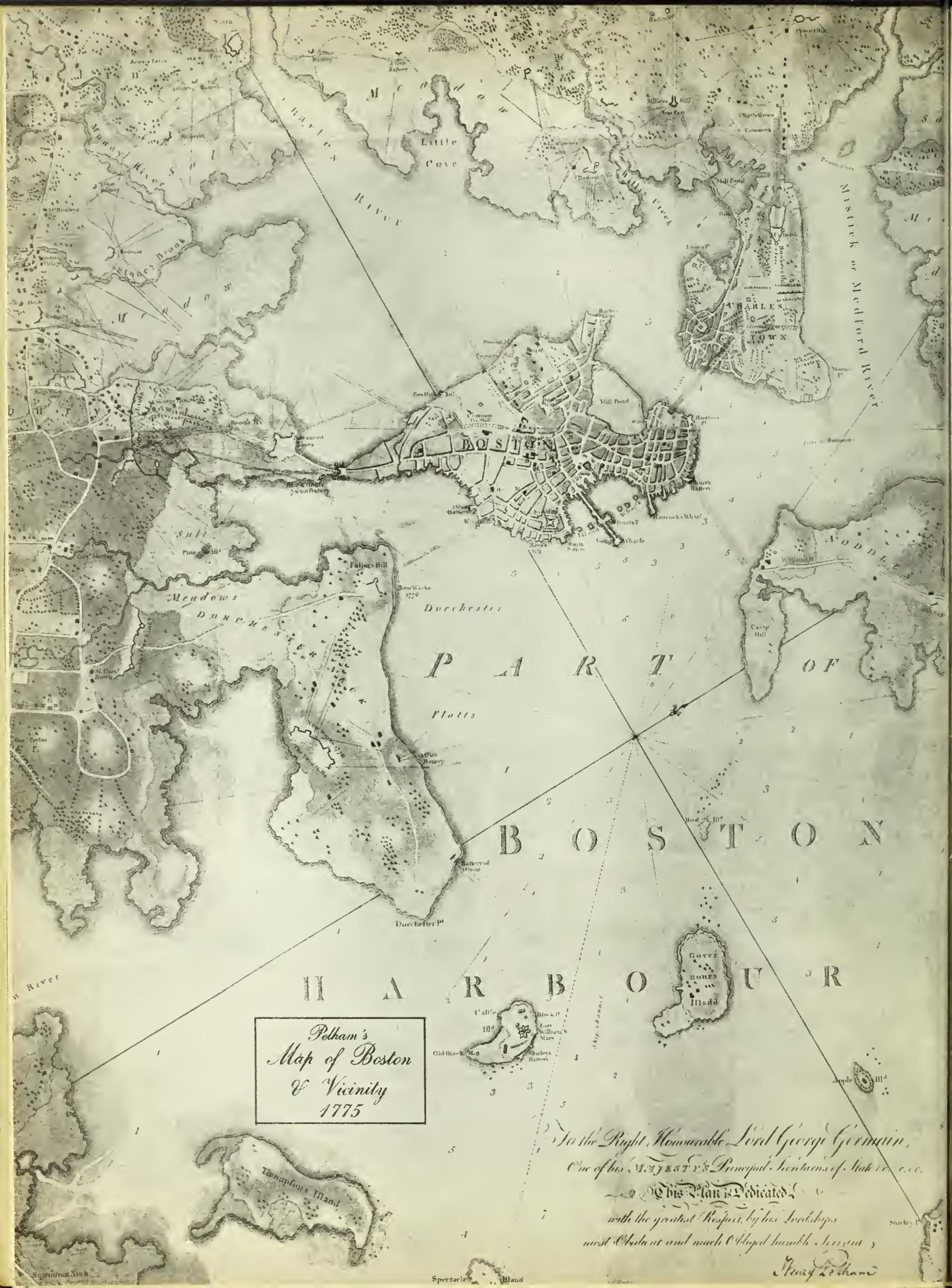
ADAMS, HOWARD, AND GREELEY

---

\* Resigned

## TABLE OF CONTENTS

		PAGE
<b>I. BUSINESS AND INDUSTRY</b>		13
1.	THE ECONOMIC BASE—IMPORTANCE	13
PRINCIPAL ELEMENTS AND THEIR TRENDS		14
MANUFACTURING		14
RETAIL TRADE		17
WHOLESALE TRADE		21
SERVICE TRADES		22
CONSTRUCTION		24
OTHER ELEMENTS		26
BOSTON'S ECONOMIC FUTURE		27
2.	DEVELOPING A PLAN FOR BUSINESS AND INDUSTRIAL LAND-USE—OBJECTIVES	28
INFLUENCING FACTORS		29
ECONOMIC FORCES		29
SPACE LIMITATIONS		29
TRANSPORTATION CONSIDERATIONS		29
MODERN DESIGN REQUIREMENTS		30
COMPATIBILITY OF LAND-USSES		30
ECONOMICS OF LAND-USSES		30
METROPOLITAN RELATIONSHIPS		31
3.	THE BUSINESS AND INDUSTRIAL PLAN FOR BOSTON	31
INDUSTRIAL AREAS		31
GENERAL BUSINESS AREAS		32
LOCAL BUSINESS AREAS		32
4.	TOWARD FURTHER DEVELOPMENT OF THE PLAN	35
<b>II. RESIDENCE</b>		36
1.	POPULATION STUDY	36
IMPORTANCE		36
COMPOSITION OF POPULATION BY 1975		36
POPULATION DENSITY		37
2.	DEVELOPING THE RESIDENTIAL PLAN	39
AVAILABLE AREA		39
REDEVELOPMENT AND CONSERVATION		39
3.	CARRYING OUT THE RESIDENTIAL PLAN	45
<b>III. SCHOOLS AND RECREATION</b>		47
1.	RELATIONSHIP TO THE GENERAL PLAN	47
2.	DEVELOPING A SCHOOL PLAN	47
OBJECTIVES AND STANDARDS		47
FUTURE DEMAND FOR SCHOOLS		48
EXISTING SCHOOLS IN THE FUTURE SYSTEM		49
<b>IV. TRANSPORTATION</b>		57
1.	RELATIONSHIP TO THE GENERAL PLAN	57
2.	ELEMENTS OF A TRANSPORTATION PLAN	57
STREETS AND HIGHWAYS		57
PARKING		59
TRUCK TERMINALS		59
MASS TRANSPORTATION		59
RAILROADS, PORT AND AIRPORT		60
3.	CARRYING OUT THE TRANSPORTATION PLAN	61
IN CONCLUSION		63
<b>MAPS</b>		
1.	CONSTRUCTION ACTIVITY (in downtown Boston)	12
2.	LAND VALUATIONS IN THE RETAIL DISTRICT	20
3.	SHOPPING FACILITIES IN BOSTON	33
4.	AREA PLANNED FOR RESIDENTIAL USE BY DENSITY CLASSIFICATION	40
5.	AREA PLANNED FOR RESIDENTIAL USE CLASSIFIED AS REDEVELOPMENT, CONSERVATION AND VACANT	41
6.	AN OBSOLETE NEIGHBORHOOD	42
7.	A NEW PLAN	43
8.	VACANT LAND MAP 1923	44
9.	VACANT LAND MAP 1950	44
<b>CHARTS</b>		
1.	TOTAL MANUFACTURING EMPLOYMENT	15
2.	MANUFACTURING EMPLOYMENT	16
3.	RETAIL SALES PER CAPITA	19
4.	COMPARISON OF TAXABLE AND TAX-EXEMPT REAL PROPERTY VALUATIONS	27
5.	TRENDS IN RETAIL BUSINESS, INDUSTRY AND TAXES	28
6.	COMPOSITION OF POPULATION	37
7.	SCHOOL POPULATION	48
8.	SCHOOL POPULATION AND MEMBERSHIP TRENDS	49
<b>PLANS</b>		OPP. PAGE
1.	AREAS FOR DEVELOPMENT	46
2.	SCHOOLS AND RECREATION	52
3.	TRANSPORTATION	60
4.	PROPOSED LAND-USE	Insert, back cover



# INTRODUCTION

---

Like their Founding Fathers before them, Americans have always been seekers after new lands and new adventures. Their insatiable thirst for the unknown has been equalled only by their compelling desire for companionship. Together these traits have created large centers of population, the complexities of which in modern times have made them increasingly unattractive for community life. Inevitably reaction in the form of decentralization is now occurring all over the country, aided and abetted by rapid transit systems and the ever-present automobile. In these respects Boston is not substantially different from any other large population center.

This migration from the urban centers to the suburbs does not necessarily mean decay. On the contrary, it frequently affords an opportunity for the older communities to profit by the mistakes of the past, to construct new streets where needed, to rehabilitate blighted, depressed areas, to establish modern recreational opportunities, to provide adequate health, hospital, school and cultural facilities, and to encourage commerce and industry in their proper locations.

While smaller in area than most great American cities — only forty-six square miles — Boston at the same time is the focus of a large and populous metropolitan area. The decentralization process has contributed, however, to a decline in Boston's proportion of the metropolitan population. This is partially offset by its daytime population which has been conservatively estimated to be as high as one and one-half million people. Boston's problem at the present time, therefore, is not only to make provision for its own citizens, but to provide adequate facilities for a substantial part of the social, economic, and political life of the entire metropolitan region. Any attempt to prepare a comprehensive or general plan for a city such as Boston, therefore, except as an integral part of the planning process for the larger metropolitan area, of necessity must suffer from limited jurisdiction. However, until such time as the broader and more fundamental approach to the development of the region is generally recognized and officially sanctioned, progress can and should be made within the confines of the city itself.

The modern concept of a general plan such as herein proposed is that it shall serve as a pattern against which current proposals and immediate programs may be evaluated. It is a point of departure for the planning agency in its recommendations to the administrative officials. It is not an end in itself, but is recognized as a tool in the hands of the Planning Board for the purpose of guiding into proper channels the impulses of the community toward a larger and broader life. While on the surface it has to do with things physical — land-use as comprehended in the laying out of streets and parks and rapid transit lines; the development of air, rail, and water facilities; the location of public buildings; and the control of population densities through subdivision and zoning regulations — its real significance is far deeper. In the words of George McAneny of New York, who has rendered distinguished service to the cause of planning in his own community:

“A proper city plan has a powerful influence for good upon the mental and moral development of the people. It is the firm basis for the building of a healthy and happy community.”

The City Planning Board, in preparing the present General Plan, has been influenced naturally by its own previous work and traditions, while at the same time giving due weight and consideration to all other factors or proposals affecting the physical development of the community. It has been felt that the Plan should be as broad, as inclusive, and as up to date as possible, and yet should build upon earlier studies by the Board wherever feasible. Hence, extensive use has been made of the zoning plan (prepared 1922-1924), the thoroughfare plan (1927-1930), the housing studies (1933-1940), the rehabilitation studies (1940-1946), and the report on playgrounds (1944-1948), as well as of the excellent work of other agencies in the planning of express highways, rapid transit, port developments, and the school system.

Since a plan must be practical, only such changes in the city's development are included as are the likely outcome of the operation of existing or predictable forces, or are capable of execution through use of existing or obtainable instruments. At the same time a realistic plan looks only to the predictable future, a relatively short time in this dynamic age, possibly twenty-five years.

From these principles and considerable fresh research this General Plan has evolved. The City Planning Board knows from experience that continuity of thought and research over a considerable period of time is necessary to comprehensive planning. Because so much study remains to be done, the present plan has been properly labelled "preliminary," while the specific subjects which must engage the attention of the Board in the future are recognized and are mentioned at appropriate points in the report.

While it is true that many of Boston's difficulties stem from the problem of decentralization, it is nevertheless heartening to note, as a result of the detailed study of its economic life as set forth in the Plan, that Boston is outstanding among cities of its own population class. The preservation and, if possible, the enhancement of the position which Boston now enjoys in the life of the greater metropolitan community is recognized as an important objective of the business and industrial plan proposed.

The powerful influence of transportation facilities upon business and industrial land-use determinations is appropriately highlighted in the report. For instance, the present program of the Port of Boston Authority to give the city modern shipping terminal facilities is noted; and that of the Metropolitan Transit Authority to develop an attractive, modern, and integrated system of mass transport.

Attention is rightfully called to the Logan International Airport, one of the world's finest and most readily accessible landing facilities. From the enviable position which the Logan Airport occupies today, with its more than 2,000 acres and its modern terminal buildings, representing a total investment of \$50,000,000, it is interesting and even inspiring to look back to 1922 — less than thirty years ago — when the Legislature authorized an appropriation of \$35,000 for the purchase of sixty acres of partially filled land in East Boston as the first step in a project which today stands securely fixed as a cornerstone to the welfare and prosperity available to the entire region.

Boston's share in the major highway program now emerging under the direction of the Department of Public Works of the Commonwealth is also found worthy of comment, particularly so since it is illustrative of the time lag between plan and reality. All of the early reports and recommendations having to do with the highways of Boston had one thing in common — a recognition of the necessity for a north-to-south facility. A definite plan for an "Intermediate Thoroughfare" was proposed in 1923 by the City Planning Board upon the recommendation of one of its members, William Stanley Parker. In the Whitten Report of 1930, and in the report of the Joint Board for the Metropolitan Master Highway Plan of 1948, this highway was given first priority as the "Central Artery," until finally, under the bond issues authorized in 1949 and 1950, the project is now under actual construction as an integral part of a comprehensive plan.

Boston is an old city, and it is to be expected that many of the old buildings have outlived their usefulness. Nevertheless, the spirit of Bulfinch still persists, and in many of the older buildings beauty and charm are happily combined with utility and need. While these early achievements should not be overlooked, any residential plan looking to the future must bear a substantial relation to population trends and to area limitation, as well as to highways and rapid transit facilities, schools, recreation, commerce, and industry.

It is well known that the oldest public school with a continuous existence in this country was founded in Boston in 1635 — the Public Latin School. This marked the beginning of a comprehensive system of schools of which Boston may well be proud. The changes needed to meet the requirements of the future as to capacity and distribution of facilities are among the provisions of the General Plan.

Boston also has been a pioneer in the field of recreation, beginning with the early recreational use of Boston Common, purchased in 1634. From the first park acquisitions, and later the first separate playground acquired by the city in Charlestown in 1891, there has developed a system of parks and playgrounds, adequate in certain respects, but in need of further development and coordination with similar facilities under other jurisdictions.

In a few generations Boston has developed into a city known the world over for its economic, historic, and cultural advantages. Present-day citizenship carries with it a challenge, therefore, to uphold for the benefit of future years the ideals and traditions of the past so that, in the words of the oath of the Athenian youth — "thus, in all these ways, we may transmit this city, not only not less, but greater, better and more beautiful than it was transmitted to us." In that spirit, and as a definite step toward the fulfillment of that aspiration, the accompanying preliminary General Plan for Boston has been prepared and is herewith released.

# SUMMARY OF FINDINGS AND RECOMMENDATIONS

---

## BUSINESS AND INDUSTRY FINDINGS

1. Boston has within its corporate limits substantially greater economic activity than other cities in its population class because it is the center of the economic, political, and social life of a great metropolitan community of 2,000,000 people.

2. In the main, Boston appears to be retaining this position in such indicators as manufacturing employment, wholesale business, service trades, and construction, but the trend in retail trade is toward *relative* decline, in spite of the fact that the city's actual volume of retail business is greater than ever before.

3. In providing employment for at least 100,000 more persons than can be found in the city's own resident labor force, Boston's business and industry provide the essential justification for maintaining the total of residence within the city at or near its present volume.

4. The importance to Boston of its economic base is further emphasized by the fact that at least 60% of the municipal revenue is derived from business and industry, while the great majority of residential properties represent a liability, tax-wise, to the city.

5. For business and industry as a whole, real estate taxes represent today a smaller proportion of the aggregate dollar volume of business done than 20 years ago. It is questionable, therefore, that there is justification for the belief in some quarters that *local realty taxes* are the determining influence upon business and industrial location.

6. Although business volume throughout the metropolitan area was generally much larger in 1948 than at the beginning of the decade, the increase did not bring a proportional gain in either number of establishments or number of employees. The trend (and it is a significant one) is toward relatively fewer, but larger, establishments.

7. Probable additional growth of metropolitan Boston will cause a tendency toward increased economic activity within the central city itself. If the problems inherent in congestion can be solved, provision can be made for such expansion, as well as improvement in the status of present business activity.

## RECOMMENDATIONS

1. While continuing to rely mainly on present business and industrial sites, Boston should use every possible means of providing additional area for expanding activity and modernization, as well as for replacement of facilities uprooted by highway and housing developments.

2. Advantage should be taken of the subsidies afforded by the national Housing Act of 1949 to enlarge existing business and industrial areas by redevelopment of certain adjacent deteriorated areas now in mixed use.

3. The city should assist in further reclamation of tidal lowlands and flats by such public projects as that proposed for the South Bay area, as a way of improving its long-term economic position.

4. Improvement of Boston's transportation and terminal facilities should be hastened by all agencies concerned. The economic future of Boston depends upon it.

5. Rezoning of the city in conformity with the general plan should be undertaken as soon as possible to give every reasonable encouragement to business and industry.

6. An exhaustive study of local taxation should be made to determine whether basic changes in tax policies are necessary to maintain the economic health of the community.

7. Local retail shopping facilities should be consolidated or improved through rezoning and carefully planned construction of parking and other public works.

8. The impact of defense requirements on Boston's future should be seriously taken into account in further planning, but requires state and federal impetus.

## RESIDENCE

### FINDINGS

1. The attractions of Boston as a large urban center have not prevented a continuous net out-migration since 1920. Though there are other reasons for this loss, the fact must be faced that Boston cannot meet the rising demand for additional new housing, owing to its lack of attractive vacant sites for development.

2. The future population of Boston, therefore, depends on how much housing can be provided within the city limits according to reasonable standards. It is highly probable that Boston will have fewer people in 1975 than at present.

3. Trends indicate that by 1975 Boston will probably have as many family dwelling units as at present, and perhaps more. The families, however, will be smaller. There will be fewer children and young or middle-aged parents, but more young adults and old people. These changes in composition of population and families will require some alteration in distribution of housing, according to density classifications.

4. The housing objective should be to replace obsolete dwellings in such a way as gradually to bring the total of housing into line with actual requirements based on population characteristics. This means centrally located blighted areas should be redeveloped at relatively high densities, while the more remote vacant lands should be built at low densities.

5. Boston has approximately 16,000 acres (gross) to devote to habitation. This area is divided roughly as follows: conservation areas, to remain substantially in their present condition, 11,000 acres; blighted areas, to be redeveloped for residence, 3,000 acres; vacant land available for residence, 2,000 acres.

6. No plan is possible which can redevelop such crowded sections as the North End or West End to house as many inhabitants as at present, while adhering to acceptable standards. However, high costs of site acquisition in these areas make imperative the maintenance of relatively high densities. Otherwise the subsidies required would be prohibitive.

## RECOMMENDATIONS

1. Boston should recognize the public responsibility for organization of its residential areas into safe, healthy, happy, and convenient neighborhoods. The first step is to carry forward a vigorous planning program.

2. The complete overhaul of the zoning of residential areas will assist in transforming them into well-designed neighborhood units and encourage application of modern techniques to community development.

3. A program of urban redevelopment should be vigorously prosecuted.

4. Additional public housing will probably be necessary to rehouse families displaced from redevelopment areas.

5. Subdivision control powers should be given to the City Planning Board to improve prospects for proper development of remaining vacant lands.

6. Public assistance in the form of a coordinated works program and technical advice should be given to help rehabilitation in conservation areas.

## SCHOOLS AND RECREATION

### FINDINGS

1. Future trends in child population are of crucial importance in planning a school system. Owing to migration and a fluctuating birth rate, the proportion of children to total population in Boston will continue to be very unstable. As in the past, the shock of drastic changes will continue to be absorbed by the *public* school system, which must therefore maintain adaptability.

2. However, the public school system will probably not again attain the peak of enrollment reached in 1933; rather, by 1975 it is likely to have fewer pupils than in any previous year of this century.

3. At present Boston has many more public schools than are necessary to meet practical requirements. The residential area and number of children served by the average building suggest that the elementary school system is, at best, only 50% efficient in regard to distribution of facilities. At all levels of public education the situation is similar — more buildings than necessary, and inadequate sites.

4. By 1975 it should be possible to reduce by at least one third the total number of public elementary and junior high schools. This would result in savings which, when capitalized, could make a material contribution towards the construction of complementary new facilities.

5. Through the foresight of earlier planners, Boston has today a major park system which is generally in keeping with modern space standards. However, there are serious locational and area deficiencies as regards children's playgrounds and playfields for active adult recreation.

6. An adequate system of playgrounds and playfields would be composed of facilities about two thirds of which could be selectively retained from the present systems and one third of which would be new acquisitions.

## RECOMMENDATIONS

1. In order to eliminate obsolete facilities Boston must build some new schools. The city should move toward a modern system comprising substantially fewer, but better designed, buildings than at present, erected at favorable locations, according to an over-all plan.

2. The plan of schools and recreation should be completed and improved to provide a ready guide for acquisition of new sites whenever and wherever opportunity affords, through coordinated effort among public and parochial school and recreation authorities.

3. Redevelopment and highway programs should contribute toward the broader recreation objectives, as by aiding in development of green belts, where desirable.

## TRANSPORTATION

### FINDINGS

1. In general, the transportation improvements already planned by other public agencies are consistent with the Board's concept of a proper future development of Boston. Accordingly, these proposals (some of which originated with the Board) have been incorporated within the General Plan.

2. An outstanding need of the future is a coordinated system of express highways. It is essential not only to handle large volumes of traffic, but to relieve secondary and minor streets.

3. A planned program of highway terminal facilities, such as off-street parking and truck terminals, is absolutely essential to the success of the transportation function.

4. The mass transportation system must be increased to reverse the trend towards private automobiles in commuting to the central area.

## RECOMMENDATIONS

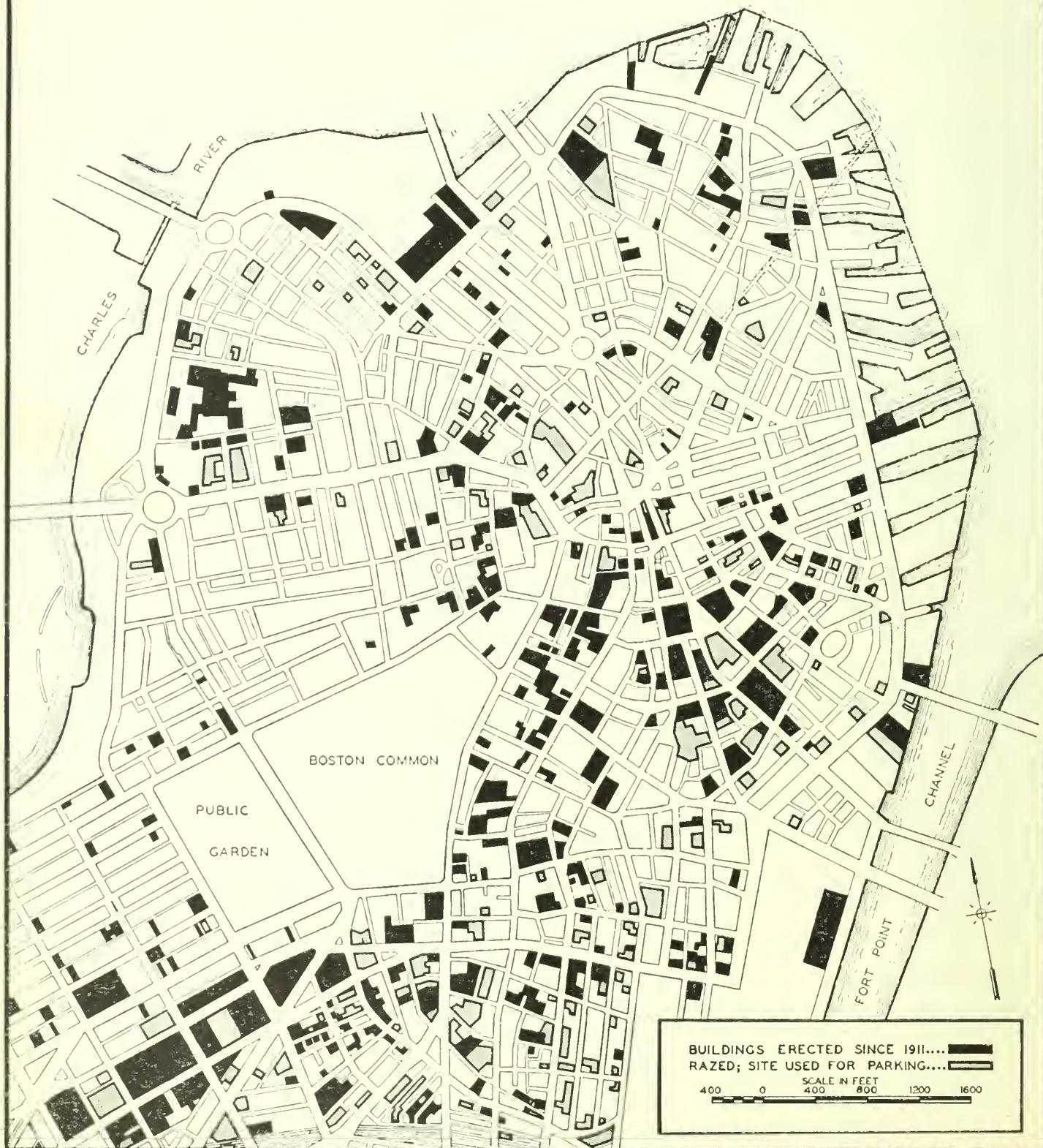
1. The planning and executory functions of the various agencies concerned with transportation improvements in Boston should be coordinated, possibly by requiring that proposals be referred to the City Planning Board for study and report.

2. A master capital improvement program to cover regional transportation developments should be undertaken, probably at the state level, but should provide also for coordination of local programs.

3. Concerted, unrelenting effort should be made by all agencies to build as quickly as possible the transportation improvements incorporated in this General Plan.

# CONSTRUCTION ACTIVITY

## 1911 - 1950



# I. BUSINESS AND INDUSTRY

---

## 1. THE ECONOMIC BASE

### IMPORTANCE

The demand for goods and services necessary to sustain life in a great city like Boston is enormous. Part of this demand is met by productive forces within the city itself, but the larger part is represented by importation from the outside. Payment must be made for these imported goods and services; hence, in some lines, at least, the city must produce beyond its own requirements and then convert this surplus into cash or credits. The source of this exportable surplus is the primary fount of wealth in any city and must be most zealously protected and enhanced. Because it is recognized as the essential foundation of the community, it is together with other kinds of activity known as the economic base. It may assume many forms, even within the same city. Commerce, manufacturing, government, transportation, military advantages, climatic or environmental conditions favorable to residence or recreation: any one of these or all of them together may constitute a city's economic base.

In addition to being a primary provider of jobs, wages, and profits, the economic base, directly or indirectly, is the backbone of the city's tax structure. In Boston well over half of the revenue of the municipal government is derived from business enterprises, whereas a preponderance of municipal costs is incurred through direct services to residential properties and their occupants. Thus, the tax structure of Boston rests upon the earning power of business property, the high valuation of which would never have been possible if based solely on the needs of the population within the city limits. The importance of the economic base from this point of view cannot be overemphasized. More than half of all the families in Boston reside in dwelling accommodations having an average valuation of under \$2,500, paying less than \$150 annually in direct

taxation, while the cost of educating a single pupil in the public schools is nearly \$300 annually. Such a city cannot afford impairment of its economic base. It cannot afford to become primarily residential.

The founding and growth of most cities arose from an early recognition of the economic base potential inherent in the particular site. As a consequence, early patterns of development showed a marked deference to the physical requirements of the basic economy. This was sound logic. Invariably, urban development follows closely the evolution of the economic base of the community. City planning, therefore, is largely a matter of continuous reconsideration of economic factors, which still merit top priority in land-use assignments.

Boston is the central core of a great metropolitan area and, like most cities so situated, has a varied economy. It is probably fortunate that no one kind of activity is predominant. Diversification not only provides a cushion to absorb the shock of decline in any one field, but also tends toward social enrichment of the city by attracting many kinds of people. Boston is also a city of relatively small enterprises, another factor which tends toward stability, though it contributes as well to complexity.

Analysis of the economy of Boston requires statistical information, much of which has been gathered by the United States Bureau of the Census. Volumes of business in terms of dollars and employment, both important indices, are reported for manufacturing, retail, wholesale and service trades, and for construction. To these, as important elements in the economy of Boston, may be added governmental and semipublic services, banking, insurance and real estate, transportation, communication and public utilities, and the professions.

A proper understanding of Boston's economic base involves individual consideration of trends within each of these constituent elements and their probable effects upon:

1. The livelihoods of Bostonians.
2. The tax structure.
3. Land-use demands.
4. Metropolitan relationships.

This is a job of great magnitude, a job which this report does not pretend to have covered. Therefore, there is presented in the following sections the product of a limited investigation, comprising meagre information regarding past trends and a recognition of the obvious necessity for much additional study.

## PRINCIPAL ELEMENTS AND THEIR TRENDS

### MANUFACTURING

Though not of the same relative importance as in other large cities, manufacturing as a source of employment is still the most significant element of Boston's economic base. It is estimated that nearly one fourth of all the jobs in the city are in manufacturing. A comparison of such employment in Boston with that of other cities in its population class is shown in TABLE I.

Manufacturing employment in Boston reached an all-time high during the period of World War I, with 110,000 jobs. After a sharp decline in the postwar recession, there was a partial recovery and a fairly high level of employment was maintained for nearly 10 years. Later, during the Great Depression, the number of jobs in

industry fell to about two thirds of the figure which had prevailed during the boom years. World War II restored substantially the situation of 20 years previous. In 1947, manufacturing in Boston gave employment to 101,000 workers, an increase of 5% over the predepression period. This may be compared to an increase of three tenths of 1% in the next largest city in the metropolitan area, Cambridge.

These changes reflect instability in the national and world-wide economies, rather than pressure of purely local forces. In fact, trends in industrial employment in Boston are more encouraging than in the remainder of the metropolitan area, or in the state as a whole. This is shown in TABLE II.

TABLE I.—MANUFACTURING EMPLOYMENT, 1947 \*

City	Establishments	Production Wage Earners, Average For Year	Wage Earners Per 1,000 Population	Wage Earners Per Establishment
BOSTON.....	2,825	79,510	103	28
Baltimore.....	1,638	97,656	114	60
Cleveland.....	2,813	181,670	207	65
Pittsburgh.....	1,033	65,257	97	63
St. Louis.....	2,330	141,232	173	61
San Francisco.....	1,990	47,781	75	24

\* Census of Manufactures, U. S. Bureau of the Census.

TABLE II.—MANUFACTURING EMPLOYMENT IN MASSACHUSETTS \*

	EMPLOYEES PER 1,000 POPULATION			
	1919	1929	1939	1947
Massachusetts.....	185	130	112	127
Metropolitan Area including Boston.....	127	90	68	88
Metropolitan Area excluding Boston.....	133	84	63	80
BOSTON.....	118	97	74	101

\* U. S Bureau of the Census. Figures are for production workers only.

Manufacturing activity in Boston is diverse in character and comprises mostly small plants. Both factors tend toward stability. In TABLE III is shown the distribution of workers by types of industry.

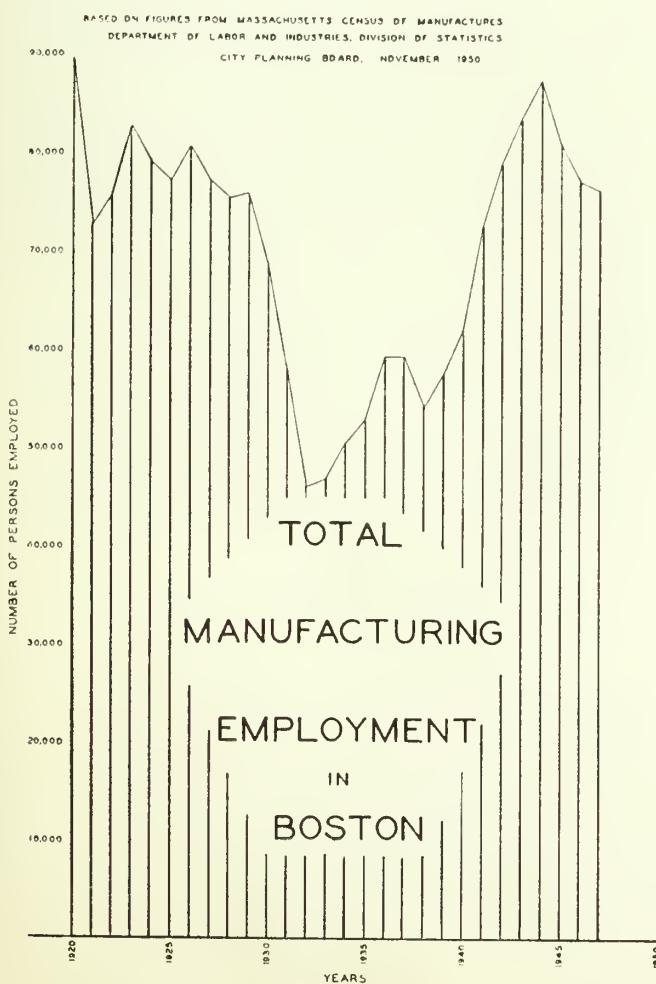


Figure 1

It should be observed also that most of these industries inherently are geared to the constant demands of a popular market. This lends support to a belief in a strong tendency toward a continued high level of manufacturing employment for the foreseeable future.

Industry is at the same time an important part of Boston's tax structure. The Income and Cost Survey Report prepared by the City Planning Board in 1934 contains evidence that at least 10% of the total real estate tax is paid by industrial property. In addition, there are substantial personal property taxes and corporation taxes from the same source. Furthermore, while accurate accounts are not obtainable, it is probable that the costs of municipal services to industrial property are far less than these tax revenues.

The truth about taxes cannot be realized simply by looking at any one index, such as tax rate, or assessed valuation. Value of the dollar is also of critical importance. Thus, from 1930 to 1940, the *taxable valuation* of real estate in Boston declined by about 25%. The total levy upon property remained fairly constant, however, owing to a corresponding rise in the *tax rate*. These conditions, being general throughout the city, were applicable to industrial property, which, measured by volume of employment, was undergoing a serious reduction in activity. To make matters worse, the dollars paid out in taxes had risen in value in the interim. Naturally, there was great concern about taxes among the taxpayers.

Since 1940 the trend has been reversed somewhat. Industrial activity has increased substantially; property valuations have remained con-

TABLE III.—EMPLOYMENT IN SELECTED INDUSTRIES, BOSTON

INDUSTRY	NUMBER OF PRODUCTION WORKERS *				
	1929	1936	1940	1945	1947
Clothing, men's and women's.....	9,702	8,735	10,573	13,034	13,451
Printing and publishing.....	6,641	6,535	6,587	6,129	7,169
Foundry and machine shop.....	4,669	3,409	3,732	4,849	5,183
Bread and other bakery products.....	2,636	3,299	3,180	3,138	1,805
Boot and shoe cut stock and findings..	1,313	1,074	1,024	1,171	772
Electrical machinery appliances and supplies.....	2,927	1,269	2,138	5,932	5,003
Meat packing, wholesale.....	336	545	740	747	494
Confectionery.....	3,980	2,540	2,132	1,714	1,937
Boots and shoes, other than rubber...	5,480	2,126	2,298	2,648	3,793
Furniture (including store and office fixtures).....	2,102	1,214	1,041	905	1,223
Boxes, paper.....	1,117	868	1,037	1,117	2,749
Heating and cooking appliances (not electrical).....	—	832	1,786	3,256	—

\* U. S. Bureau of the Census.

## MANUFACTURING EMPLOYMENT IN BOSTON

(PRODUCTION WORKERS ONLY)

IN SELECTED INDUSTRIES, 1926 TO 1946

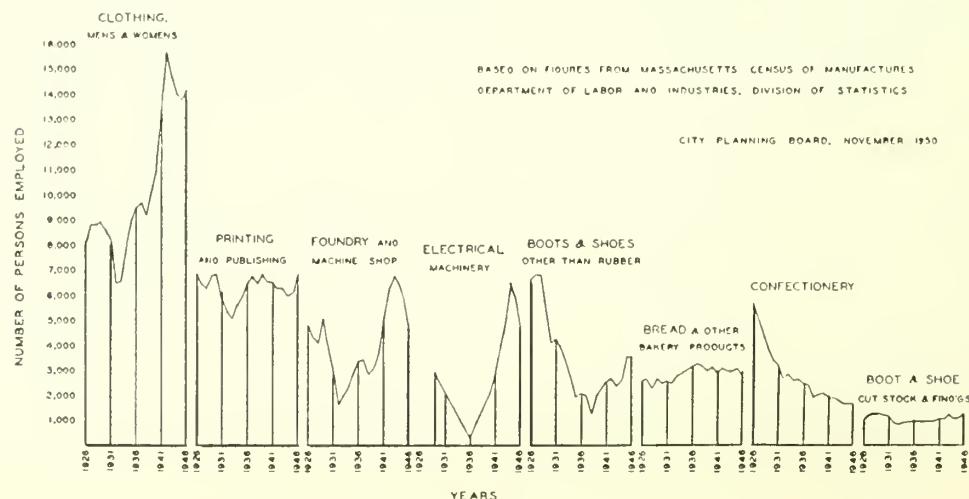


Figure 2

stant, and the tax rate has risen by 50%. Property owners are paying half again as much in taxes as they did 10 years ago, but appear to be less concerned about it. Why? Because the taxes are being paid in dollars which buy only what 55 cents would have bought in 1940, while individual and corporate incomes in Massachusetts are more than double the figures for that same year. In short, it is quite possible that with regard to local taxation the Boston manufacturer has been actually more favorably situated during and after World War II than at any time during the preceding 15 years. (See figure 5, page 28.)

The question arises as to why Boston has experienced no increase in industrial activity, as measured by employment,\* in a period of 30 years. The chief answer, it seems, can be found in the relative decline of the entire region as an important part of the national economy. New England is neither rich in agriculture nor significant as a source of raw materials. Geography gives this area, on the whole, a transportation disadvantage. Leadership based upon early settlement and such physical factors as water power was bound to evaporate as other regions were developed and mechanical progress at one end of the scale paradoxically contributed to obsolescence at the other. Lack of pressure for industrial expansion in New England naturally has influenced trends in Boston, metropolis of the region.

Local factors, too, have undoubtedly retarded industrial progress in Boston. For examples there are the scarcity of adequate development sites, transportation problems, and what appears on the surface to be a local tax disadvantage.

\* It should be noted, however, that the monetary value of Boston's industrial production stood higher in 1947 than in any previous year, even when allowance is made for price inflation.

On the favorable side may be listed the large and growing market in the region, a magnificently developed supply of water of unsurpassed quality, an abundance of skilled labor, and excellent educational and research facilities. These advantages are among the most likely reasons for the strong recovery of Boston after the industrial decline of the thirties. Together with such possibilities as the establishment of a steel industry in New England based on Labrador ore, they comprise the key to the industrial future of the region and the city.

## RETAIL TRADE

Since ancient times the market place has been one of the principal focal points around which a city is built. As the city develops, adding both area and population to its girth, the *total* increase in trading activity normally does not follow the distribution of this new growth, but will accrue in part to the old central business place. Hence, when the community takes on the form of an original settlement surrounded by politically independent suburbs the central city invariably contains a trading district which in all respects far exceeds the normal requirements of its own population. This business activity provides also a greater than normal volume of jobs and taxes; hence, it is a most important element of the central city's economic base.

Retail business in Boston has employed about 73,000 persons, with little variation, for the past 20 years. Thus, it stands second to manufacturing as an important source of employment.

A comparative measurement of retail activity in terms of sales-volume in dollars is given in TABLE IV.

TABLE IV.—RETAIL TRADE \*

	1929	1939	1948
BOSTON.....	\$672,800,000	\$490,396,000	\$1,078,972,000
Metropolitan Area including Boston.....	1,080,798,000	885,075,000	2,034,794,000
Metropolitan Area excluding Boston.....	407,998,000	394,677,000	955,877,000
Massachusetts.....	2,054,976,000	1,737,680,000	4,258,279,000

\* U. S. Census of Business.

A proper understanding of these figures requires further elaboration, as follows:

1. A comparison of the *actual* volume of goods and services exchanged at retail can be made on the basis of *dollar-volume* for different periods of time, if the change in the retail buying power of the dollar is figured in the calculation. Thus, TABLE IV can be restated in terms of 1948 dollars, as shown in TABLE V.

It is evident from these figures that retail trade in Boston declined by 12% between 1929 and 1939, but by 1948 had recovered and advanced 20% beyond the 1929 level. On the other hand, the suburban fringe outside the city limits has shown continuous progress, gaining 76% in the 20-year period.

2. From these figures a deduction can be made regarding Boston's relative position as the central trading area for the metropolitan region.

Thus, in 1929 Boston's share was 62% of the total metropolitan retail business; by 1939 it had dropped to 56%, and in 1948 it stood at only 53%.

3. This decline could merely reflect Boston's smaller share of the metropolitan population, or it might mean also that suburbanites are giving the central city a smaller *share* of their business.

To determine which theory is correct would require knowledge of distribution both of buying power in the metropolitan area and the business patronage of Boston residents. This information is not available. However, if reasonable assumptions are made, it appears probable that Boston is not getting as large

a percentage of the suburban business as formerly, for while the 20-year decline in the share of business was 9%, the drop in the share of population was only 3%.

4. The actual increase in Boston's retail business can be explained by the increased buying power of all the metropolitan population. Suburban residents, though giving a smaller *share* of their business to Boston, may yet be buying more goods and services in the central city than ever before.

Property devoted to commercial use, including the trading of goods or services at wholesale or retail and activities incidental thereto, is the source of at least 40% of the real estate taxes in Boston, and it may be as high as 50%. Furthermore, it is *retail* business which contributes most to this high tax return.

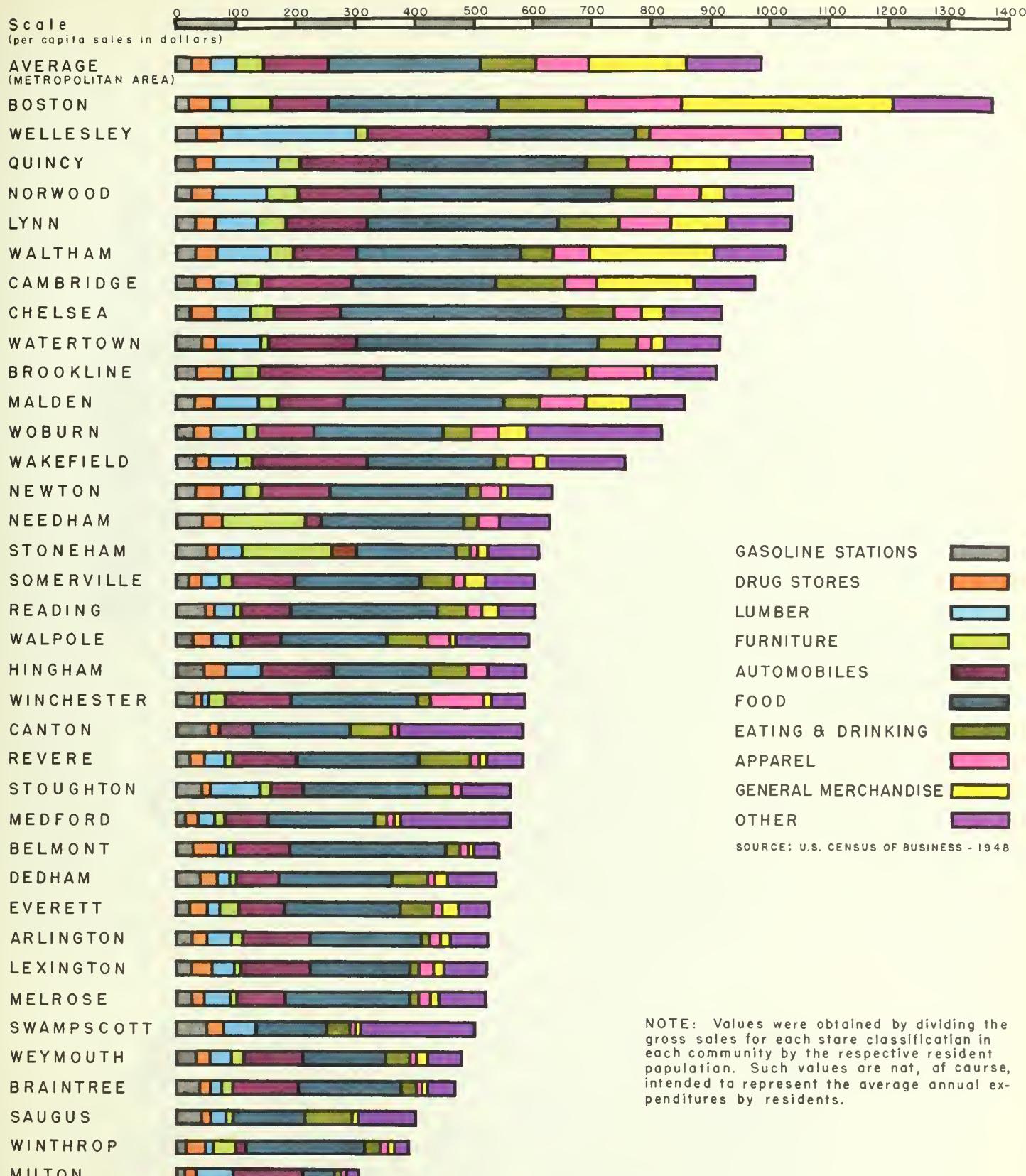
To gain an understanding of the role of retail trade in the tax structure, one must analyze the geographical distribution of business property valuations. This is a very important study. Its effect upon sound planning for the future of Boston is far-reaching, though perhaps not openly apparent. An attempt is made at this time to present only so much of the analysis as is required to see the trends in retail business property valuations and taxes.

The inherent earning power of any particular site for retail trading purposes should be reflected in the money value of the land. A downtown area of 70 acres, only one fourth of 1% of Boston's total land area, has been identified as the central retail trading district. In 1930 the taxable valuation of this *land* (excluding buildings) was \$170,000,000, and the real estate tax levy upon it exceeded

TABLE V.—RETAIL TRADE  
(VALUE OF DOLLAR ADJUSTED TO 1948 CONDITIONS)\*

	1929	1939	1948
BOSTON.....	\$895,000,000	\$783,000,000	\$1,078,972,000
Metropolitan Area including Boston.....	1,440,000,000	1,410,000,000	2,034,794,000
Metropolitan Area excluding Boston.....	543,000,000	629,000,000	955,877,000
Massachusetts.....	2,740,000,000	2,777,000,000	4,258,279,000

\* Value of dollar determined by comparing consumers' price index for the various years. This index is based on prices of a variety of items, some of which are not representative of the goods and services comprising the reported dollar-volume of retail trade. For this and other reasons, the "corrected" figures in the table should be considered as only rough approximations.



NOTE: Values were obtained by dividing the gross sales for each store classification in each community by the respective resident population. Such values are not, of course, intended to represent the average annual expenditures by residents.

## PER CAPITA RETAIL SALES IN BOSTON AREA COMMUNITIES

Figure 3

# LAND VALUATIONS IN THE RETAIL DISTRICT

1950 vs 1930

VALUATION CHANGE



THEREFORE, PAYING MORE IN TAXES, AND A GREATER SHARE OF THE TOTAL TAX THAN IN 1930.



NEVERTHELESS, PAYING MORE IN TAXES, AND A GREATER SHARE OF THE TOTAL TAX THAN IN 1930.



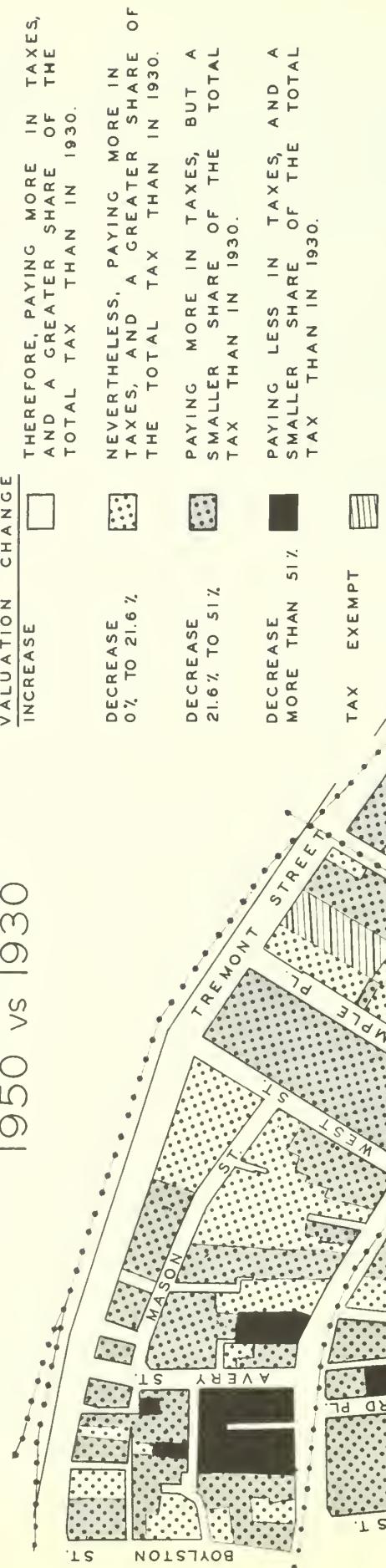
PAYING MORE IN TAXES, BUT A SMALLER SHARE OF THE TOTAL TAX THAN IN 1930.



PAYING LESS IN TAXES, AND A SMALLER SHARE OF THE TOTAL TAX THAN IN 1930.



TAX EXEMPT



\$5,000,000. This was nearly 10% of the entire city tax. By 1950 the valuation had tumbled to \$111,000,000 and, though the *tax rate* was more than double the 1930 figure, the contribution of this central retail business land to the total city tax had dropped to less than 8%. Thus, the earning power of *land* in the downtown retail district is a factor of diminishing importance in the tax structure of Boston. This decline is serious, for here is nearly one fifth of the city's total land valuation.

An examination of individual land parcels shows that the highest and most stable valuations are in closest proximity to the convergence of the most important rapid transit lines. As the distance from these transportation facilities is increased, so too are values found to have diminished in proportion. In retrospect it seems very likely that in 1930 the high valuations at the fringes of the central business district were merely symptoms of a speculative boom, and not a true index of the actual earning power of the land. Fictitious values have literally collapsed as underlying expectancies failed to materialize. Restoration, moreover, hardly appears imminent.

This tax loss to the city has been largely overcome by a rise in building valuations and in the tax rate. While the present status of *all* retail business property is uncertain, owing to incomplete research, the *central district* is carrying only a little less of the total tax load than it did 20 years ago. One can but guess as to whether this is more or less favorable to the retailer. It is certain, however, that property taxes today make up a smaller share of private business incomes than in 1930. (See figure 5, page 28.)

It seems logical to conclude that taxes are at least of doubtful importance in the decline of Boston as the metropolitan retail trading center. A more likely factor is the automobile. Decentralization of population and lack of easy motor access to the Boston business district have set the stage for the competitive suburban shopping center, designed for the motor age. If the importance of retail trade in the economic base of Boston is to be sustained, the challenge of these suburban rivals must be met. This can be done if Boston will cultivate carefully the advantages inherent in its status as metropolitan center — advantages based upon easy accessibility to the mass-transit customer or the merchandising of the highly specialized product in a broad market.

#### WHOLESALE TRADE

Boston is the predominant center of wholesale trade, not only for the metropolitan area but also for the state and region. This is indicated in TABLE VI.

In 1939 Boston handled 90% of the wholesale trade in a metropolitan community with 2,000,000 population. It is not surprising that this city has exceeded all others in its own population class in wholesale business activity. (See TABLE VII.)

In 1948 Boston had 45,000 jobs in wholesaling, an increase of 24% over 1939. This change is consistent with the trend of activity as measured by sales, which, when corrected for alteration in the wholesale price index, show an actual increase of 29% in volume of business for the period. The 1948 sales record also shows an increase of

TABLE VI.—WHOLESALE TRADE \*  
(THOUSANDS OF DOLLARS)

	1929	1939	1948
BOSTON.....	\$2,357,016	\$1,634,784	\$4,503,130
Metropolitan Area including Boston.....	2,530,703	1,816,513	5,078,218
Metropolitan Area excluding Boston.....	173,687	181,729	575,088
Massachusetts.....	3,065,855	2,232,117	6,327,290
New England.....	4,005,910	3,171,487	—

\* U. S. Census of Business.

10% over 1929, in actual volume. Thus, wholesale trade is an important and a growing source of employment in Boston.

It should be noted that Boston's proportionate share of the metropolitan wholesale trade is declining slightly. In 1929 it was 93%, in 1939 it was 90%, and in 1948 it stood at 89%, on the basis of sales records. However, sales volume may not be indicative of physical activity in terms of goods moved or real property requirements. For much of the reported selling consists merely of paper work done in downtown sales offices while the actual transfer of goods takes place elsewhere.

As in the case of retail business, land in downtown Boston devoted to wholesale trade has suffered a great decline in valuation since 1930. In what may be a majority of cases individual parcels are now valued so low that the tax yield is actually less than 20 years ago. It appears certain that wholesale business property is a factor of diminishing importance as a source of real estate taxes while at the same time these taxes are a smaller percentage of the wholesaler's gross receipts.

Boston's favorable predominance in wholesale business undoubtedly arises from its advantages of centrality and transportation relative to the great market which it serves. If these advantages are carefully safeguarded and strengthened in the future, the city should be able to maintain its status as the great regional center of wholesale trade.

## SERVICE TRADES

The United States Census of Business makes a distinction between the sale of goods at retail and the sale of services, referring to the former as "retail trade" and to the latter as "service trades." Services include such enterprises as laundries, barber shops, repair shops of all kinds, hotels, and entertainment. Professional services, however, are not included.

In service trades again, as in the retail and wholesale trades, Boston reaps the benefit of its status as core of a great metropolis. Evidence supporting this conclusion can be seen in TABLE VIII.

A more recent survey of service trades, in 1948, omitted certain types of activity which had been included in the 1939 figures. In TABLE IX, which is presented to permit evaluation of trends, a correction has been made for this discrepancy.

These statistics seem to justify the following general conclusions:

1. Boston's proportionate share of the metropolitan total of establishments, business, and actively employed persons in the service trades has increased substantially since 1939.
2. The trend in all quarters seems to be toward fewer but bigger businesses, with the average establishment in Boston being larger than the average outside of Boston.
3. Concurrently with this trend, and quite possibly because of it, a situation has

TABLE VII.—WHOLESALE TRADE IN VARIOUS CITIES, 1939 \*

	No. of Establishments	SALES		Employees
		Total	Per Capita	
BOSTON.....	3,361	\$1,634,784,000	\$2,120	36,298
Baltimore.....	1,664	578,628,000	673	17,715
Cleveland.....	2,226	946,653,000	1,075	23,539
Pittsburgh.....	1,745	832,069,000	1,240	20,787
St. Louis.....	2,663	1,164,102,000	1,425	34,367
San Francisco.....	3,359	1,377,614,000	2,170	34,612

\* U. S. Census of Business.

TABLE VIII.—SERVICE TRADES, 1939 \*

	Establishments	Receipts	Receipts Per 1,000 Population	Active Proprietors of Unincorporated Business	Employees
BOSTON.....	6,589	\$51,956,000	\$6,740	6,271	15,719
Metropolitan Area including Boston.....	12,680	86,613,000	4,410	12,053	26,672
Metropolitan Area excluding Boston.....	6,091	34,657,000	2,900	5,782	10,953
Massachusetts.....	24,783	138,433,000	3,210	24,211	41,030
Baltimore.....	5,542	33,551,000	3,910	5,405	13,606
Cleveland.....	6,325	43,469,000	4,940	6,102	13,006
Pittsburgh.....	3,691	29,920,000	4,460	3,725	9,103
St. Louis.....	6,444	43,939,000	5,390	6,170	15,766
San Francisco.....	6,576	61,893,000	9,760	6,987	19,239

\* U. S. Census of Business, 1939. Figures do not include hotels and places of amusement.

developed where a substantially higher volume of business is being done, with fewer persons actively engaged in rendering the service. For example, when allowance is made for monetary depreciation, Boston appears to have had, since 1939, a service trades business

increase of 17%, with 839 fewer persons actively engaged.

The diversified character of the service trades is revealed in the statistical table for various categories. (See TABLE X.)

TABLE IX.—SERVICE TRADES \*  
1939 vs. 1948

	ESTABLISHMENTS		RECEIPTS, IN THOUSANDS OF DOLLARS		ACTIVE PROPRIETORS OF UNINCORPORATED BUSINESS		EMPLOYEES	
	1939	1948	1939	1948	1939	1948	1939	1948
BOSTON.....	6,089	4,914	\$46,761	\$90,422	5,819	4,624	13,754	14,110
Metropolitan Area including Boston.....	12,397	9,619	85,381	149,095	11,792	9,221	26,356	25,147
Metropolitan Area excluding Boston.....	6,308	4,705	38,620	58,673	5,973	4,597	12,602	11,037
Massachusetts.....	23,096	19,669	128,748	275,311	22,663	13,512	37,832	44,265

\* U. S. Census of Business. 1939 figures adjusted to allow comparison with 1948.

Further analysis shows that *more than half of the working personnel* are in lines where very small enterprises are predominant — usually operated by the owner himself, with help from one or two employees. However, this type of business, probably dependent mostly upon local patronage, *accounts for less than half of all the business*. The larger share is done by lines comprising only 14% of the establishments, in which, however, may be found fewer than half of all persons actively engaged in the service trades. These enterprises include business and transportation services, amusements, and hotels. Inherently, they seem less likely to be dependent upon a local clientele, assuming instead a metropolitan character. Thus, a big part of Boston's service-trades business appears to be dependent upon maintenance of the city's status as the focus of the metropolitan area.

Service trades are generally dispersed through properties devoted also to other kinds of business. Hence, conclusions regarding real estate taxes paid by the wholesale and retail trades are

applicable also to the service trades. It should be noted, however, that hotels and places of amusement generally have not had the benefit (if it can be called that) of a big reduction in valuation. There is evidence that these properties, comprising possibly 5% of the city's total valuation, are paying a higher proportion of the entire real estate tax today than 20 years ago.

## CONSTRUCTION

Complete information about the construction industry in Boston is hard to get. A full accounting should include public projects as well as private building, and also activities outside the city by Boston contractors when such operations are handled through personnel recruited and paid in the city. However, it seems that the chief source of reliable statistics is in the records of the Boston Building Department, which cover only such construction within the city as requires a building permit. These figures are, without doubt, a very big part of the actual total and if considered

TABLE X.—SERVICE TRADES IN BOSTON, 1939 \*

	Establishments	Receipts, in thousands of dollars		Active Proprietors of Unincorporated Businesses	Employees	
		Total	Per Establishment		Total	Per Establishment
Personal services.....	4,220	\$23,880	\$5.7	4,142	7,979	1.9
Business services.....	591	12,906	21.8	500	3,474	5.9
Services allied to transportation.....	43	3,295	76.7	14	1,452	33.8
Automotive repairs.....	533	6,249	11.7	447	1,528	2.9
Other repairs.....	670	2,902	4.3	674	526	0.8
Custom industries.....	457	1,900	4.2	438	513	1.1
Miscellaneous.....	75	824	11.0	56	247	3.3
Totals, above.....	6,589	\$51,956	\$7.9	6,271	15,719	2.4
Places of amusement.....	257	16,315	63.5	149	2,501	9.7
Hotels.....	54	15,181	281.0	7	6,153	114.0
Totals, all items.....	6,900	\$83,452	\$12.1	6,427	24,373	3.5

\* U. S. Census of Business.

TABLE XI.—BUILDING CONSTRUCTION IN BOSTON \*

PERIOD	ANNUAL AVERAGE, NEW CONSTRUCTION		ANNUAL AVERAGE, ALTERATIONS		ANNUAL AVERAGE, TOTALS	
	Permits	Estimated Cost	Permits	Estimated Cost	Permits	Estimated Cost
1925-1931.....	3,199	\$39,350,000	5,783	\$8,539,000	8,982	\$47,889,000
1932-1945.....	534	6,398,000	4,703	4,552,000	5,237	10,950,000
1946-1949.....	770	29,980,000	7,239	11,714,000	8,009	41,694,000

\* Source: Boston Building Department.

over a long period of time should rate as a reliable indicator of trends in the construction industry.

As an era of construction in Boston, the period 1925-1949 can be subdivided as follows:

1. Post World War I boom, 1925-1931.
2. Period of subnormal activity, 1932-1945.
3. Post World War II, 1946-1949.

Within each of these periods the volume of new construction and building alterations was fairly consistent. Averages presented in TABLE XI show the variations as between periods.

Upon analysis of the reports for individual years, with due consideration being given to

changes in the value of the construction dollar, it appears that:

1. What constitutes "normalcy" in new building operations cannot be ascertained from the record;
2. Alterations are a much steadier element than new construction; but
3. Nothing since 1931 can approach the volume of new work undertaken annually during the boom period of the twenties.

Lack of vacant land seems to spell an end to the period of rapid new growth in Boston. In the future, construction activity within the city must be mainly replacement and alteration. One

TABLE XII.—CONSTRUCTION ACTIVITY FOR VARIOUS CITIES, 1939 \*

	Establishments	Value of Work, Thousands of Dollars	Value of Work, Per Capita	% of Work Performed Within the City	Active Proprietors and Firm Members	Average Number of Employees
BOSTON.....	1,269	\$63,710	\$83	31%	1,130	12,627
Cambridge.....	207	8,201	74	—	174	1,922
Somerville.....	156	3,454	34	—	158	682
Baltimore.....	1,836	51,653	60	54%	1,786	14,393
Cleveland.....	1,651	54,449	62	55%	1,486	10,269
Pittsburgh.....	1,533	69,882	104	43%	1,549	12,748
St. Louis.....	2,456	49,794	61	54%	2,387	11,385
San Francisco.....	1,813	74,741	118	53%	1,979	15,451

\* U. S. Census of Business, 1939. Figures are based on office address of firms reporting, not on location of projects.

can but speculate as to the rate at which this work will progress. At present, the assessed valuation of all buildings in Boston is in excess of \$1,000,000,000, but the actual replacement cost must be at least twice that figure. On the basis of an average useful life of 50 years (which does not allow for the *accumulated* obsolescence of the past) it seems that a *minimum* long term average of \$40,000,000 annually for new building construction and alterations is *necessary*, if increased obsolescence is to be avoided. The *desirable* level of activity is certainly in excess of this figure. There is good cause for believing that the "boom" eras represented, after all, only a comforting "normalcy" in volume of construction.

As might be expected, Boston is construction headquarters for the metropolitan area. In 1939 the city accounted for more than half of the metropolitan total and 38% of all the construction activity of the state. Despite the relative lack of expansion possibilities within the city itself, the amount of work performed by Boston contractors has compared favorably with similar figures for other cities. (See TABLE XII.)

Nearly half of the work attributed to Boston contractors in 1939 was performed by firms doing \$500,000 or more of business for the year. Most of these firms are building, highway, and heavy contractors who, it seems, might find it expedient to be established in a big city. Small contractors in the special trades, and more likely to be located

in proportion to the distribution of population, account for only one fourth of the 1939 construction business in Boston.

Construction activities centering in Boston should provide the equivalent of full-time employment for *at least* 20,000 persons, as a long term average. This goal, though seldom attained in the past, is a practical and logical aspect of progressive change in the greater metropolitan community and fully capable of attainment through concerted action based on a commonly accepted plan.

## OTHER ELEMENTS

Nearly half the economic life of Boston, measured in terms of employment, must remain in relative obscurity, owing to scarcity of information. The principal elements involved are:

1. Governmental and semipublic services.
2. Banking, insurance, and real estate.
3. Transportation, communication, and public utilities.
4. Professional services.

One can only guess as to the trends within each of these fields. Changes and expansion within the more basic parts of the regional economy have undoubtedly brought considerable increase in these other phases, some of which can be regarded properly as a kind of "overhead." This "overhead," quite obviously, can derive some advantages from centrality of location, and therefore Boston is very likely a substantial beneficiary of the increase in activity.

TABLE XIII.—BANK DEBITS TO DEPOSIT ACCOUNTS \*  
(Federal Reserve System)  
MILLIONS OF DOLLARS

	1919	1929	1941	1949
BOSTON . . . . .	\$19,614	\$27,540	\$18,192	\$28,597
Baltimore . . . . .	4,846	5,217	6,217	11,514
Cleveland . . . . .	7,836	11,439	10,183	20,964
Pittsburgh . . . . .	8,955	13,515	11,635	23,350
St. Louis . . . . .	8,215	9,841	8,908	17,532
San Francisco . . . . .	9,118	16,988	11,918	28,032

\* Does not include interbank accounts.

Expansion of governmental and semipublic services is reflected in the rise of tax-exempt property valuations. In 1925 only 17.8% of all real property valuation in Boston was exempt from taxation. By 1945 this figure had risen to 28.4%. A very large part of this rise can be traced to property of the United States and reflects the great increase in both peace and war activities of the Federal government. Another factor of great significance is the growth of public housing.

Whether it is wise to exempt so much of the real property in the city from taxation has long been under serious discussion. But the tangible benefits gained from the presence of this property cannot be doubted. Direct employment of at least 50,000 persons is now provided in Boston by the various levels of government. Hospitals, private education, charitable associations, and others provide many thousands more. In addition, these agencies induce private business activity, which is subject to taxation. The question of whether Boston is unduly burdened with a disproportionate share of metropolitan tax exemptions remains for future determination.\*

Boston has long been known as a center of finance, not only for its own region but for developments in all parts of the world. A comparison of the volume of commercial bank activity in Boston and other cities of like size appears in TABLE XIII.

While comparable figures are not available as a measure of activity in the insurance field, Boston's importance in that area is well known.

Banking and insurance are not alone a lucrative source of wealth for the community as a whole; they are also very important as employers and taxpayers. At present Boston banks employ 8,000 persons and insurance firms employ 12,000 in the most highly valued taxable properties in the city. It is estimated that at least 5,000 persons are employed in the real estate business in Boston.

As New England's leading port and as the regional rail and distribution center, Boston is a

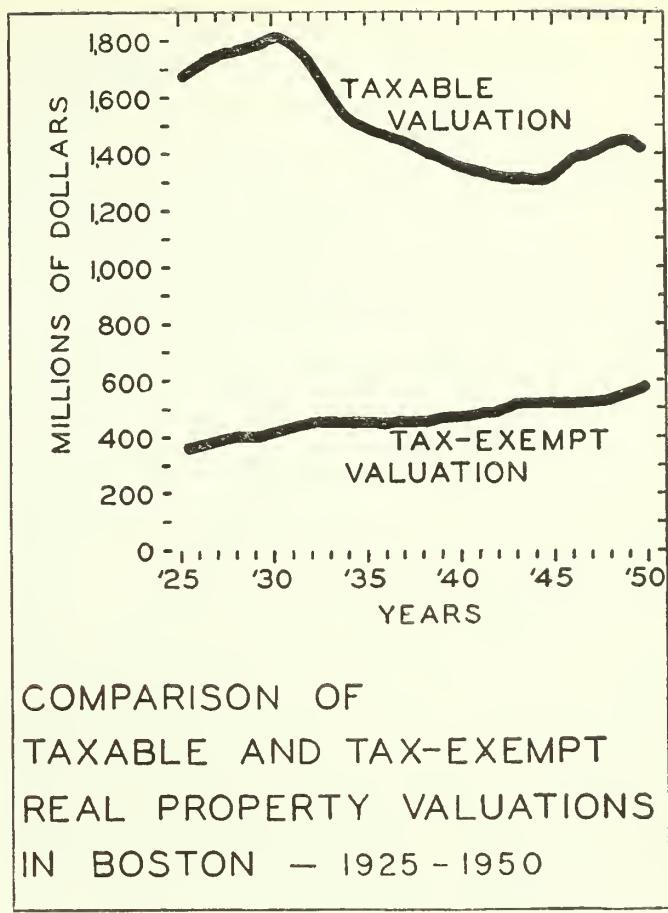


Figure 4

city in which transportation looms large as an economic base factor. In 1940 there were 65,000 employees in transportation, communication, and utilities *in the metropolitan area*, 25,000 of them resident in Boston. It seems likely, on the basis of a more recent inquiry, that Boston itself gives employment in these fields to at least 40,000 persons.

The census of 1940 classed as professional the occupations of 87,000 people in the metropolitan district while for Boston residents the figure was 30,000. The professions are largely identified with education, public health and government and it is probable that Boston, as the primary center of activity in those fields, is also pre-eminent as a locus for professional offices.

## BOSTON'S ECONOMIC FUTURE

Boston stands revealed as the heart and nerve center of a great metropolitan community. *Having only 37% of the metropolitan population and 9.5% of the area, it yet has:*

*81% of the wholesale trade employment,  
56% of the retail trade employment,*

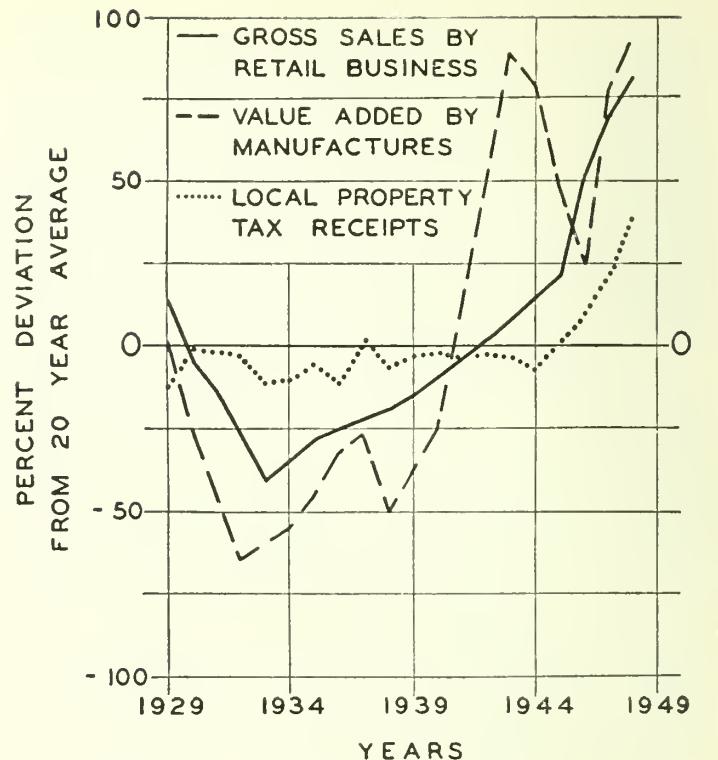
*56% of the service trades employment,  
57% of manufacturing employment,  
60% of government employment,  
44% of the total taxable real property valuation.*

\* In 1940, with only 9.5% of the metropolitan area, Boston had 57% of the tax-exempt property valuation.

In virtually every branch of the economy Boston is outstanding among cities in its own population class. The city, it seems, should be enjoying a most enviable position.

The trends indicate, moreover, that as the metropolitan community grows the advantages of centrality are at least potentially great enough to exert some pressure for continuing growth in Boston. In fact, however, unless individual efforts are guided in that direction with the benefit of a commonly accepted general plan, the opposing forces tending toward decentralization may prove to be the stronger. For substantial concentration of the economic life of 2,000,000 people within the geographically small central city has brought serious problems and the desire for escape. Metropolitan Boston will experience in the next 25 years two kinds of change: new physical growth and replacement of its worn out parts; and in planning the future of the central city there are two alternatives: more concentration or decentralization. In either case the changes for the entire region are serious enough to demand its unified attention in terms of metropolitan planning and redevelopment powers.

For the city of Boston, at the present moment, there is no true choice available. The city cannot, on its own account, plan for decentralization; to do so would not merely be impractical but would also court financial disaster. Boston's real problem is to offset the forces tending toward decentralization by encouraging continued renewal of its economic base components



**TRENDS IN RETAIL BUSINESS,  
INDUSTRY, AND TAXES  
BOSTON, 1929 — 1948**

within the city and, if possible, to provide some room for limited expansion. This will call for strong measures in a city having little vacant land. The first step is a soundly conceived business and industrial land use plan; the second is a forthright public program.

## 2. DEVELOPING A PLAN FOR BUSINESS AND INDUSTRIAL LAND-USE

### OBJECTIVES

The proposition has been well stated that before one can have a plan one must have a purpose.

In preparing the business and industrial plan for the future a single general objective was recognized: *the preservation and, if possible, the improvement of Boston's position as predominant center of the economic, social, and political life of the greater metropolitan community.* Upon the fulfillment of this objective depends the successful achievement of many of the other goals of the

general plan, such as improved housing, more efficient transportation, and a more complete and stimulating system of recreation. Justification for the rebuilding of blighted residential areas at relatively high densities must be found largely in the fact that Boston's economic base has been able to furnish employment for at least 125,000 more workers than the city itself has been able to supply. And the programs of public improvements necessary to change the face of this city must be predicated upon a sustained high tax return from Boston's business and industrial property.

## INFLUENCING FACTORS

The character of a plan is influenced not only by its own objectives but also by the environment in which it must operate and the available instruments by which it can be carried out. The City Planning Board has, therefore, given due consideration to limitations imposed by the following factors.

### ECONOMIC FORCES

Need, based upon prospects for increased or diminished activity, is of primary importance in estimating the future business and industrial land-use requirements. The economic base study has indicated that for all elements metropolitan Boston shows prospects of continuing growth, of the slow but steady kind. While this is not a guarantee that the *central city* will share in the expansion, there will be, nevertheless, a continuing *tendency* toward further concentration. If the problems inherent in unplanned congestion can be solved, Boston should be able to anticipate with confidence that a very real and tangible need for business and industrial expansion within the city limits will make its presence felt.

### SPACE LIMITATIONS

The stability of existing land-use pattern over a period of past decades suggests that present business and industrial locations in Boston are basically sound. The real problem appears to be an insufficiency of space.

In finding area for increased activity there are but three possibilities: present business and industrial sites, land now used for other purposes, and vacant areas. At this moment, Boston has little to offer in vacant lands for business use, and the chief possibility for providing such seems to lie in further reclamation of tidal lowlands and flats.

The national Housing Act of 1949 offers Federal aid for projects which undertake to redevelop blighted residential areas for future non-residential uses, including business and industry. Potential use of this aid exists in any community which can identify areas in which such a shift in uses would be desirable and feasible. In Boston, as in most big cities, business development in the past has required penetration of central residential districts, and this, along with other factors, has hastened the process of blight. Hence, at the

fringes of the most important business centers there are areas which warrant consideration for possible redevelopment with business or industry.

The City Planning Board believes that while Boston must rely mainly upon its existing business and industrial areas in meeting the requirements of the future, every chance to expand these sites by conversion of suitable contiguous areas should be considered carefully. Only in this way can the city continue to grow as the healthy heart of the expanding metropolitan community.

### TRANSPORTATION CONSIDERATIONS

Commerce is essentially the exchanging of goods, and this implies that the goods must be moved. Transportation facilities have a powerful influence upon business and industrial land-use determinations. Boston's status as pre-eminent shipping, rail and air terminal for the region is possibly the city's greatest single guarantee of future economic stability.

There are five current or impending developments in transportation which will have a profound effect upon future plans for business expansion in Boston. These are:

1. The program of the Port of Boston Authority which will give the city modern shipping terminal facilities capable of improving substantially the city's status as the number one port of the region.

2. The master highway program for metropolitan Boston, the primary purpose of which is to make the central business district the most accessible point in the region for both trucks and passenger vehicles. This highway program should have a revolutionary impact upon the thinking of all who are involved in planning the future of downtown Boston. It will go far toward preparing the way for a true solution of the problem of congestion.

3. Extension of the rapid transit lines into the suburbs surrounding Boston. This will do much to check the trend toward decentralization which has been evident in some elements of Boston's economy and which can be attributed to present access disadvantages.

4. The off-street parking program undertaken as a public responsibility by the city itself.

5. A system of union truck terminals, as proposed by the City Planning Board in 1947, which should help restore the advantages of centrality to shippers and consignees in Boston.

These programs are all in line with the Planning Board's thesis that further economic growth in Boston is not merely possible but likely, if the forces tending in the opposite direction can be brought under control.

## MODERN DESIGN REQUIREMENTS

Boston needs more space for business and industry even if the expected increase in volume should fail to materialize. Many of the existing plants are obsolete and inefficient and must eventually be replaced. It is well known that modern design tends toward much greater space requirements at the ground level than formerly. More area will be needed not only for the rebuilding of individual plants, but also in the redesign of commercial and industrial areas as a whole, to allow for the widening of streets, public off-street parking, and other improvements. In addition, current or proposed highway and housing projects and the residential redevelopment contemplated in this General Plan will eliminate about 300 acres of land now in business and industrial use, or zoned for those purposes.

## COMPATIBILITY OF LAND-USES

The very essence of city planning is a recognition of the distinguishing characteristics and requirements of various kinds of land-uses. For this purpose the City Planning Board has found it expedient to employ the use definitions set forth in the Boston zoning law. This law is, of course, neither unchangeable nor perfect, but until such time as it may undergo substantial change and improvement, it stands in its present form as the only definition of land-uses capable of legal application in Boston. This is important because there is an obvious advantage in consistency between land-use definitions in the General Plan and those of the legal instrument which will aid materially in effectuating the plan.

The need for classification and segregation of land-uses is really one of protection for some types against the harmful effects of others. Retail shopping centers, as well as residences, must be kept free of the odors, smoke, and noise of heavy industry which in turn must be distinguished from the more tolerable forms of light manufacturing.

The three classes of business and industrial uses in the Boston zoning law and adopted for the purposes of the General Plan are:

1. *Local business*, not to be construed as business enjoying only a local, neighborhood patronage, but including all forms of trade and services at retail and not specifically prohibited in the less restricted zoning classifications. "Local business" may also include some forms of light manufacturing, provided not more than half the building area is involved and more than half the goods produced are sold at retail on the premises.

It should be observed that much of the downtown business area conforms with this definition, though the scope of the business carried on is hardly "local."

2. *General business*, primarily wholesale trade and warehousing, but including also any other form of business or industrial activity not specifically prohibited in this or any less restricted zoning classification. "General business" in Boston may be considered as analogous to the "heavy commercial" and "light industrial" designations of other cities.

3. *Industrial*, including all forms of manufacturing banned from the general business classification and such other uses as future amendments to the zoning law may allow in Boston's least restricted districts.

The foregoing classifications, though admittedly very general, will still permit a reasonable evaluation of the interrelationships of the city's business and industrial areas, both with one another and with other kinds of land-uses.

## ECONOMICS OF LAND-USES

Most of Boston's business and industry is private enterprise. Recognition of the need for profitable return necessarily enters into any realistic determination of business land-use patterns. The planner must constantly ask of himself: "Would the proposed use, under all the related factors, including probable site development costs, be economically feasible to the owner and operator?"

Feasibility should normally be reckoned on the basis of unaided private business operation, but if a subsidy in some form is available and justifiable, it should enter into the determination.

The municipality also has a stake in the land economics aspects of city planning. As often as conditions may warrant, the inherent earning ca-

TABLE XV.		
LAND-USE IN BOSTON		
(NET LAND AREA IN ACRES)		
	1935	1950
Single Family.....	3,160	3,528
Two-Family.....	2,613	2,656
Multifamily.....	2,338	2,573
Local Business.....	758	822
General Business.....	766	793
Industry.....	2,192	2,267*
Railroads.....	992	964
Parks.....	3,259	3,263
Public, Semipublic.....	3,294	4,609†
Streets.....	4,650	4,689
Vacant.....	5,391	4,195
	<hr/> 29,409	<hr/> 30,359

\* Includes 65 acres of filled-in water area.

† Includes 885 acres of filled-in water area for airport.

pacity of a site should be saved for that form of use which can obtain the maximum return and thereby be most useful in the city's tax structure. Intelligent land planning should be the very heart of any progressive, long-term tax policy in Boston and the more so because of the city's heavy dependence upon other than a self-generated economic base.

Other factors influencing business land-use planning would include the topography and sub-soil conditions and dimensional or space-sufficiency characteristics at any particular site. These may be important enough to impose serious restrictions upon land-use allocations, both in the city as a whole and at specific locations.

## METROPOLITAN RELATIONSHIPS

It should never be forgotten that corporate Boston is only a part of a much larger community. The business and industrial plan for the central city must be made with a view to suburban conditions outside, to insure proper relationship of land-uses on both sides of the boundaries. Industry located near the city limits should be in harmony with the proximate land-uses of the neighboring community; competitive suburban sites for business should be noted, as well as suburban business patronage for district shopping centers within Boston. The goal should be a plan which will provide for Boston a share of the regional economy which can be justified on the basis of all of the factors previously set forth and so give reasonable assurance of future stability.

## 3. THE BUSINESS AND INDUSTRIAL PLAN FOR BOSTON

In preparing its preliminary General Plan, the City Planning Board makes no pretense that *full consideration* has been given to all important factors. Indeed, it is doubtful that any general plan anywhere is the result of a complete and scientific analysis of all of the related factors. Intuition and personal judgment based on limited knowledge must often be called upon, if timely results in planning are desired.

Accordingly, the business and industrial land-use plan, shown as part of the preliminary General Plan comprehended in this report, was made by observing two basic rules:

1. Areas predominantly business or industrial at present shall continue in that use

unless strong reasons can be raised for changing their status; and

2. Areas not predominantly business or industrial at present, whether actually in some other use or vacant, shall be designated as business or industrial if it can be shown that such a change is desirable in the light of the influencing factors previously discussed.

A description of the resulting plan, in general terms, follows:

**Industrial Areas.** Future industrial locations should be confined mostly to areas presently used for that purpose. Approximately 2,400 acres, comprising 8% of the city, are intended to be

predominantly industrial in character. This represents an increase of about 25% over the present situation.

The principal changes may be listed as follows:

1. An area of 18 acres in the so-called New York streets section of the South End, now a badly deteriorated residential area, is considered suitable for redevelopment with industry. Most of the advantages of centrality may be realized in this area, which is contiguous to the downtown business district. It will also have excellent accessibility, upon completion of the thoroughfare program.

2. In Charlestown the inefficiently located playground to the east and the blighted residential area to the west of Sullivan square are both well suited to industrial use. This change fits in well with transportation developments in the vicinity and will add 40 acres of considerable potential value to the city's stock of industrial land.

3. In Dorchester an area of about 22 acres, bounded by Freeport street, the Dorchester Rapid Transit, and Dorchester avenue, is now predominantly residential but has been encroached upon by other uses and is blighted. This area has little to recommend it for housing redevelopment but is a good prospect for industry.

Another area of 25 acres in the so-called "Port Norfolk" section is now partly residential and partly vacant and because of its small size and isolation has poor prospects for sound development as a neighborhood. Conditions here are favorable for conversion to industrial use.

4. A number of areas now predominantly vacant and mostly zoned for industry could be brought into that kind of use if site improvements could be expedited. These include such open water and marsh areas as the Fort Point channel and South Bay location, plans for development of which have been completed by the Port of Boston Authority, and the Belle Isle inlet area at the easterly extremity of East Boston.

There exists in Boston a total of 900 acres of land of diverse character, not presently in industrial use, but which can be made available for industry.

**General Business Areas.** Comprising mostly wholesale trade and light manufacturing, sites for general business can frequently be used to advantage as buffers between industry and local business or residence. Many of the newly planned industrial locations, previously described, should include such buffers.

As in the case of industry, future activities of the general business type must be confined largely to areas now predominantly used for that purpose, but a few significant changes should be noted, as follows:

1. In Charlestown the area between Rutherford avenue and Main street is now in mixed use, and is unsuitable for housing redevelopment. General business in this location would have good advantages and serve also as a buffer between industry and residence. In 1947 the City Planning Board suggested this location for a union truck terminal.\*

2. Adjacent to the New York streets area (intended for industry) is the so-called Castle Square section, now a blighted area of mixed use. This location affords another opportunity to expand the downtown general business district by some 25 acres.

3. In a number of other locations, general business has already begun to encroach upon residential areas and the City Planning Board believes it is only predicting the inevitable by designating these areas for eventual business use.

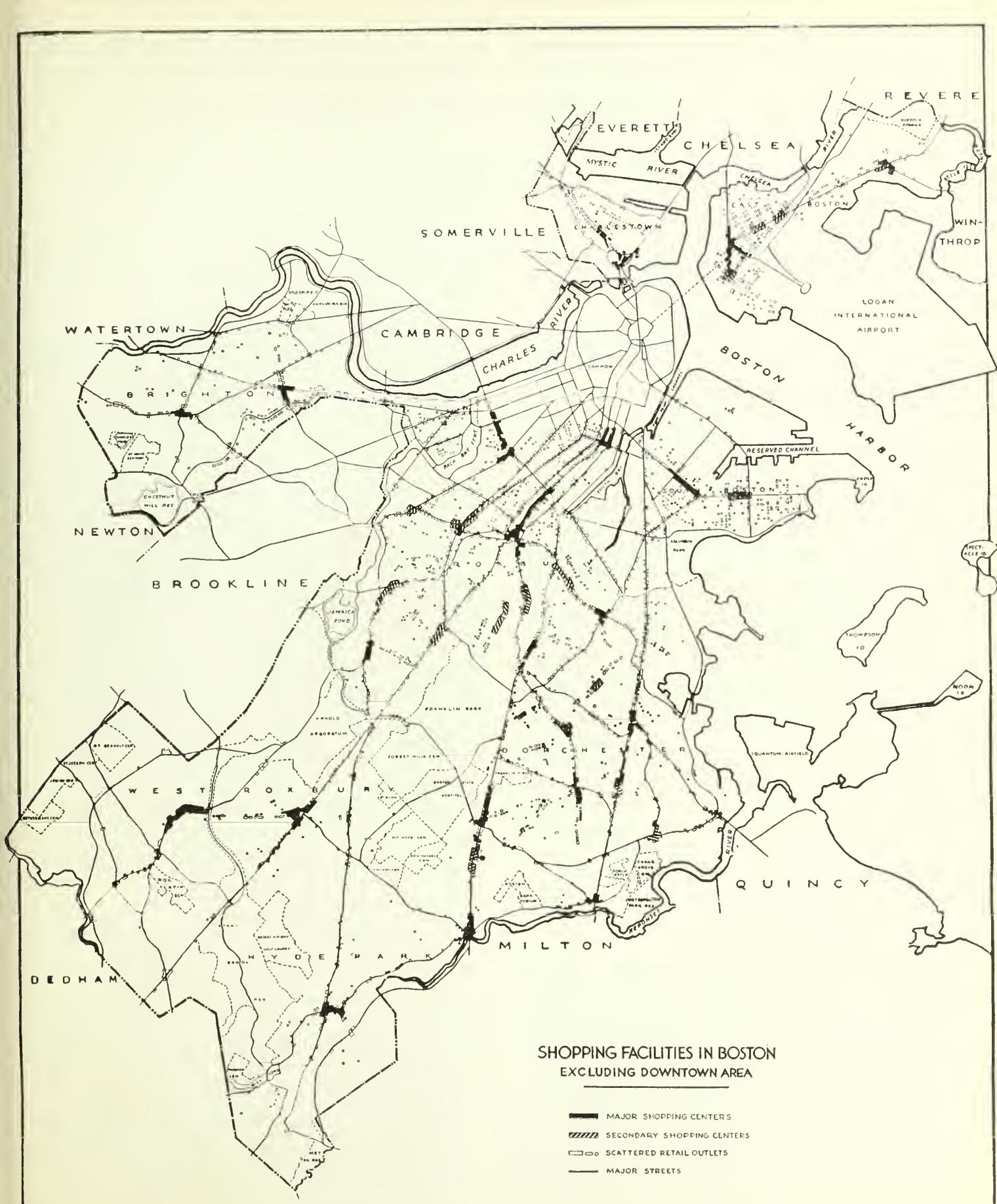
If the proposals of the General Plan are carried out there will be by 1975 an increase of 1,000 acres in the total of area predominantly in general business use.

**Local Business Areas.** The planning of local business areas is a more difficult problem than in the case of general business or industry because the status of influencing factors is less fixed. In order to facilitate the work, three types of local business area were distinguished. These are:

1. The metropolitan retail trading area, confined largely to Boston's central business district and comprising a wide variety of stores. The planning of any substantial alteration in this area must be an integral part of a new design for downtown Boston, which is not attempted in the preliminary General Plan.

---

\* Report on a Union Motor Truck Terminal for Boston, the City Planning Board, 1947.



MAP 3

2. Specialized retail trading areas such as the automobile, entertainment, or furniture centers. No marked trends have been noted in these areas and consequently the General Plan has provided for no appreciable changes.

3. District shopping facilities, to which the City Planning Board has devoted considerable time.

Because they are distributed throughout the city, shopping facilities have a far-reaching effect upon neighborhood developments and the daily lives of a great majority of the city's residents. Distribution of shopping facilities in the past has been largely the result of unrelated individual initiative, with not altogether happy results. The diffusion of stores, which so often has resulted in the hastening of residential blight and has led to frequent business failures, is shown on the map of Shopping Facilities in Boston, page 33.

Planning the future disposition of shopping facilities is based on a recognition of the need of adequate distribution of both individual stores and groups of stores called "centers." The problem is one of balancing the advantages inherent in both kinds of distribution.

A district retail trading center may be defined in terms of a minimum number and variety of stores at a single, contiguous location. The "centers" shown on the map are of two kinds, "major" and "secondary." Both types conform to the foregoing general definition but the requirements for the "major" center were set higher. Analysis of population distribution around each center indicates that, on the average, about 20,000 people generate sufficient business to justify such a concentration of stores. The geographical distribution of the centers varies, of course, with the density of population in the respective areas which the centers serve. In most cases, these areas have a radius of one-half mile, or less.

Analysis of the amount of business area in each center in relationship to the resident population of the area served shows a variation over a rather broad range. This suggests the influence of factors other than population contiguous to the centers, such as purchasing power differences, modes of transportation, congestion within the center, availability of parking, or competition from other centers.

The inherent advantages of the district retail trading center are fairly obvious and well known. For the merchant, the center affords greater patronage potential, the economy of large-

scale operation, and an advertising advantage. For the customer there is greater opportunity for selection of goods, usually a more pleasant atmosphere, and often a price advantage.

Nearly 80% of the district retail stores in Boston, however, are not located in centers at all, but are distributed sporadically, usually along the principal streets. These stores can often be justified on grounds of convenience for their customers, but for the welfare of the community as a whole it is doubtful if their number and distribution is entirely sound.

A comparison of reports of the U. S. Census of Business for 1939 and 1948 shows a marked trend toward consolidation of retail business in nearly all the communities of metropolitan Boston. More business, but fewer stores, is definitely the prospect for the future. This will happen, in any case, by operation of the forces of private enterprise. Inevitably, it seems, the result will be further strengthening of the centers and elimination of some of the sporadically distributed stores. These changes, if properly guided by good and effective city planning, could be beneficial to the city as a whole, as well as to the immediate neighborhoods.

Sound planning of shopping distribution requires two general standards: optimum ratio of stores to population, and optimum ratio of stores in centers to other stores. No attempt will be made here at full development of these standards. The City Planning Board is satisfied, however, that sufficient proof exists for concluding that Boston has more district retail stores at present than sound economics can justify, and that there is insufficient concentration into well organized centers. The objectives of good planning should, therefore, include:

1. Concurrence with the established trend toward consolidation of shopping facilities by strengthening those existing centers which appear useful to the fulfillment of a sound comprehensive plan. Improved traffic design, off-street parking, rezoning, and urban redevelopment procedures may all be invoked to achieve this objective.

2. Public encouragement to development of new primary and subcenters where they may be needed to supplement existing centers which are difficult to expand.

The preliminary General Plan, moving as far toward these goals as time has allowed, shows

those district shopping centers whose permanence appears to be justified by circumstances known to the City Planning Board. Other shopping facilities

are not shown because it is not thought that they will or should exist in such concentrations as to warrant their designation on a *generalized* plan.

## 4. TOWARD FURTHER DEVELOPMENT OF THE PLAN

Improvement of the business and industrial land-use plan will require additional study and development, not only of ideas already considered, but of wholly new concepts as well. The City Planning Board believes that early attention should be given to the following important topics:

1. Further analysis of the future actual land requirements of business and industry. For example, what kinds of industrial sites are in demand? At what price? Can the city supply these needs?

2. The impact of security requirements upon land planning. Will decentralization of industry be necessary? Can Boston, by gradual change, be so transformed as to afford reasonable protection against disaster and also retain its present status as principal center of the economic life of 2,000,000 people? Can such changes be made in time?

3. Methods whereby lands now occupied by obsolete business or industrial plants can be assembled for redevelopment with the benefit of modern principles of design.

4. A functional comprehensive plan for downtown Boston, including such details as

(a) Related civic, cultural, health and educational centers.

(b) Redevelopment of Atlantic avenue waterfront.

(c) Long-term plan for off-street parking, off-street loading, union truck terminals and wholesale produce market.

(d) Better coordination of rail terminal facilities.

(e) Geographical expansion of the business area as a possible answer to the congestion problem.

5. Further development of shopping center standards and planning of district business centers.

The City Planning Board, recognizing the scope and importance of these subjects, will encourage the utmost in active participation in this phase of planning by other agencies and interested individuals.

A necessary part of any plan is a description of the instruments and methods whereby it can be carried out.

The principal means available for public regulation of the private use of land is, of course, zoning. By careful rezoning of the city, Boston can be assured that private developments will tend to conform to the public concept of what is in the best interests of the whole community. However, more than zoning will be needed if Boston is to be rebuilt, since zoning is essentially a form of limitation, and constitutes to some degree a negative approach.

The redevelopment procedures possible under the national housing law of 1949 offer some hope because they are flexible enough to allow a broad advance on planning objectives. With the benefit of a generous Federal subsidy, the Boston Housing Authority, acting as conditions may allow, could assemble strategically located blighted residential areas for redevelopment as business or industry, at attractive prices to the developers. At present, however, it is largely a theoretical hope, owing to the practical difficulties posed by the housing shortage and the gross inadequacy of the entire national redevelopment program.

An investigation should be made of problems inherent in assembling urban land for business and industrial redevelopment with a view to devising a procedure which will not require a public cash subsidy. If such redevelopment cannot be carried out by private corporations especially chartered for the purpose, then the feasibility of creating a Boston business and industrial redevelopment authority as a public agency to carry out projects on a self-liquidating basis should be investigated.

In any case, not least among the stimulants for effectuating the plan is the plan itself. The city government, when satisfied that the plan has reached the proper stage of development, should undertake to sell its ideas to the whole community, confident that the vision of an economy which will be more efficient, more attractive, and more secure will bring concerted action.

# II. RESIDENCE

---

## 1. POPULATION STUDY

### IMPORTANCE

The General Plan of Boston is designed to serve the people of this community, and to fit their needs into the requirements of the metropolitan area. Boston is only a part of the larger urban community, even though it is the biggest part and contains the heart and core. For this reason many aspects of its planning are of necessity merely elements or fragments of a regional general plan. Highways and transit are vital elements of the metropolitan circulation network and plans for their improvement must be so designed as to benefit the people of the central city as well as outlying areas. Proposals for business and industrial land development, recognizing Boston as the major workshop and market place of the region, are aimed at securing stability and prosperity for the metropolitan community, and, through this, the optimum employment opportunity for Boston residents. Plans for schools, parks and playgrounds are even more directly related to the health and well-being of the city's people. All the other phases of the plan either clearly depend on, or are strongly influenced by, the population and residential area factors: *how many people, living where, at what densities*. Accordingly the Planning Board's studies of these factors, aimed at finding out how many people Boston will have in the future and how they will need and want to live, are basic.

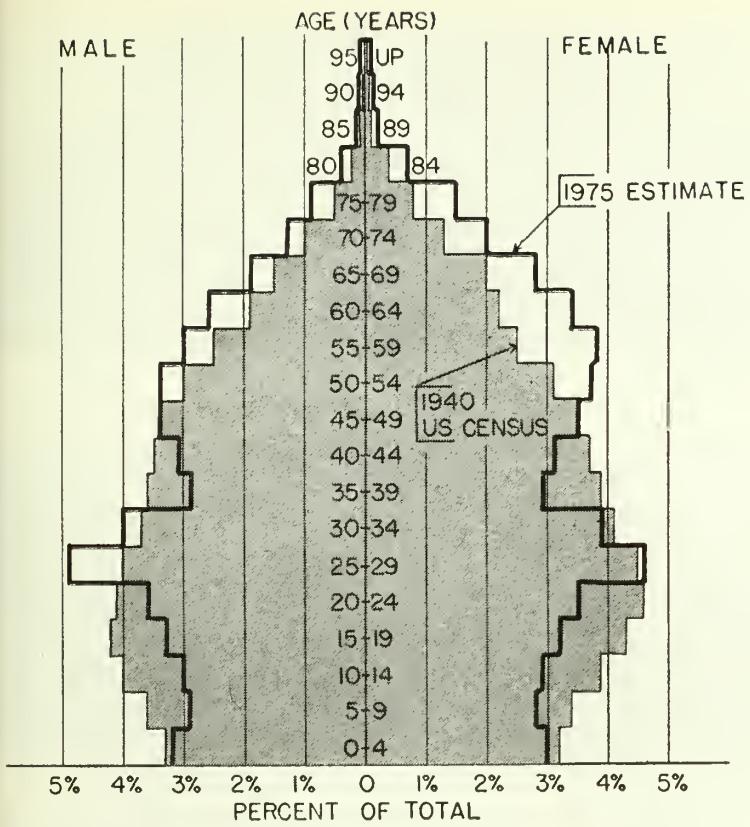
### COMPOSITION OF POPULATION BY 1975

Boston is almost all built up, and is geographically only a small part of the metropolitan urban unit. Therefore the size of its future population will be set not by the economic factors that determine the trends for the metropolitan area as a whole, but rather by the capacity and attractiveness of the city's residential areas. *Boston will probably have as many people in 1975 as it can*

*provide homes for — if they are homes that people will be willing to live in at prices they can afford.* The problem of forecasting the 1975 population thus becomes one of forecasting what kinds of homes the people of that time will require, and then how many of those kinds of homes Boston will have room for. Approached in this way, the studies of population trends and composition are inseparable from the land-use studies leading to the plan for residential areas.

Population predictions are risky at best. Based on past trends, however, it is apparent that the people living in Boston are increasingly Boston-born, rather than in-migrants. On this assumption, the composition of the city's 1975 population has been estimated by applying foreseeable birth and death rates to the 1940 figures (detailed figures from the 1950 census will not be available for another year or two). The "population pyramid" diagram (Fig. 6) shows the estimated changes in the proportion of people in each five-year age group between 1940 and 1975, *if the migration in and out of the city is not concentrated in certain age groups*.

In line with national trends, this picture shows fewer children under 10 than now, fewer people in the 35- to 45-year age group, more in the older age brackets and also more in the 25 to 35 group (reflecting the postwar baby boom of recent years). There will, of course, be people moving in and out of the city. Those moving in presumably will be mostly young single people seeking jobs and low-cost living quarters, and older folk near retirement age seeking city conveniences; while those moving out probably will be families with young children. The changes between 1950 and 1975 will therefore be along the same lines as the diagram shows, but even more marked. Since migration is not subject to direct forecast, however, this influence was not included in the calculations.



**COMPOSITION OF POPULATION IN BOSTON 1940 vs 1975**

Figure 6

These age-group changes spell significant changes in kind and number of families. The long-term local and national trend toward smaller families will probably continue. The following table indicates the shifts that are predicted for Boston (if anything, the changes are likely to be even greater):

NUMBER OF PERSONS PER FAMILY	1940		1975	
	1	2	3	4
1 . . . . .	10%	23%	20%	18%
2 . . . . .	23%	31%	24%	14%
3 . . . . .	20%	12%	11%	7%
4 . . . . .	18%	12%	11%	4%
5 . . . . .	12%	7%	4%	—
6 . . . . .	7%	—	—	—
7 and more . . . . .	10%	7%	—	—
	100%	100%		

These figures mean that the housing needs of Boston in 1975 will be quite different from today. More small apartments, for old people and young childless couples, and fewer large dwellings will be needed. This does not necessarily mean, however, that we should have more apartment areas than we have today; for at the present, the supply

of housing is not at all in balance with the real needs of people. Many large families with young children are forced to live in high-density tenement areas under conditions wholly unsuited to their real requirements. A study of the effects of migration into and out of Boston for the decade 1930-1940 suggests strongly that the lower density conditions prevailing in the suburbs offer a competitive attraction for the larger growing family which the central city is presently unable to meet in sufficient quantity.

## POPULATION DENSITY

To translate these generalizations on family size into a guide for planning, it is necessary to know more about the way different kinds of Boston families now want to live. In general, it is obvious that single people and couples are likely to live in the more densely built up sections; while families with children seek more open neighborhoods (excluding, of course, slum areas, where low-income people live as they do, not from choice but because they have to).

The study of this "pattern of occupancy" required the sorting out of the city's residential areas according to density. The classifications used show a range of average net densities as follows:

### Low densities:

up to 11.0 dwelling units per acre

### Low medium densities:

11.1-21.0 dwelling units per acre

### High medium densities:

21.1-40.0 dwelling units per acre

### High densities:

40.1 and more dwelling units per acre

These four classifications of density were derived principally from the planning standards established by the Committee on the Hygiene of Housing of the American Public Health Association for different dwelling types. They correspond approximately to the densities permitted by the yard and lot requirements of the present Boston zoning law for various zoning districts, but are not here used either to reflect present zoning or to recommend future zoning boundaries, which will require much more detailed studies of each part of the city. Each of the four types of area covers not only



4 Story Multiple — 46 f/a\*

HIGH DENSITY  
4 Story Multiple — 49 f/a\*

5 Story Multiple and up — 61 f/a\*



3 Story Multiple — 29 f/a\*

HIGH MEDIUM DENSITY  
3 and 4 Story Multiple — 30 f/a\*

3 Story Multiple — 34 f/a\*



2 Family Detached — 12 f/a\*

LOW MEDIUM DENSITY  
2 Family Semi-detached — 16 f/a\*

1 Family Row — 19 f/a\*



1 Family Detached — 6 f/a\*

LOW DENSITY  
1 Family Detached — 7 f/a\*

2 Family Detached — 10 f/a\*

#### BOSTON DWELLING TYPES CORRESPONDING TO DENSITY RANGES

These buildings are representative of the types commonly found in Boston within each net density range. In every case, the average land coverage for the block shown is below the desired maximum suggested in this study for that dwelling type.

When side and rear yards are not visible, such space as may reasonably be expected to exist, commensurate with each dwelling type, should be mentally assigned to the picture to give a clear visual understanding of net density in terms of land coverage.

\*f/a = families per acre

quite a range, but also so large a generalized area that it may include some sections and zoning districts above or below the range. For example, low density areas would be mostly single houses and double houses, but might include some apartments. Low medium areas would be typically doubles, three-deckers and row houses, but might contain some singles and some apartments. High-medium areas would consist largely of two- and three-story apartments, and high density areas of taller apartments; but both would have some mixture of other types. (For illustration of density classifications see page 38). In other words, the division of Boston into these four types of areas is a generalized picture of average densities, rather than a design for exact zoning regulations. The

plan will serve as a guide for the much-needed revision of the city's zoning, but only as far as the first steps.

Analysis of recent figures showed the proportion of families of different sizes that live in each density district (this analysis omitted slum areas where, it is felt, occupancy is determined more often through compulsion than free choice). Since the population composition study indicated the proportion of different-sized families for the total population in 1975, this made possible a calculation of how Boston's residential area should be divided among the four density districts to provide housing types in the appropriate proportions. Applying these figures to the map was the next planning operation.

## 2. DEVELOPING THE RESIDENTIAL PLAN

### AVAILABLE AREA

The land-use plan (insert) shows about 16,000 acres in Boston designated as residential area, including local business services, schools, playgrounds, and other local facilities essential to home areas. Most of this area is already firmly fixed in residential use. The only parts of the city now used for residence that were excluded were small run-down sections in the direct path of business or industrial expansion, already invaded by incompatible land-uses too costly to uproot, or cut off from other residential areas by strong barriers like railroad lines, and too small to justify the providing of schools, playgrounds, and other essential residential services. In short, only those areas are planned for permanent residential use that are already, or can economically be made, livable and capable of sustaining both human and property values.

No areas already devoted to nonresidential use were considered feasible to be changed to residential. Nearly 2,000 acres of vacant land, however, is planned for residence: all that is already incorporated within clearly residential districts, or is obviously better suited to residential development than to industry.

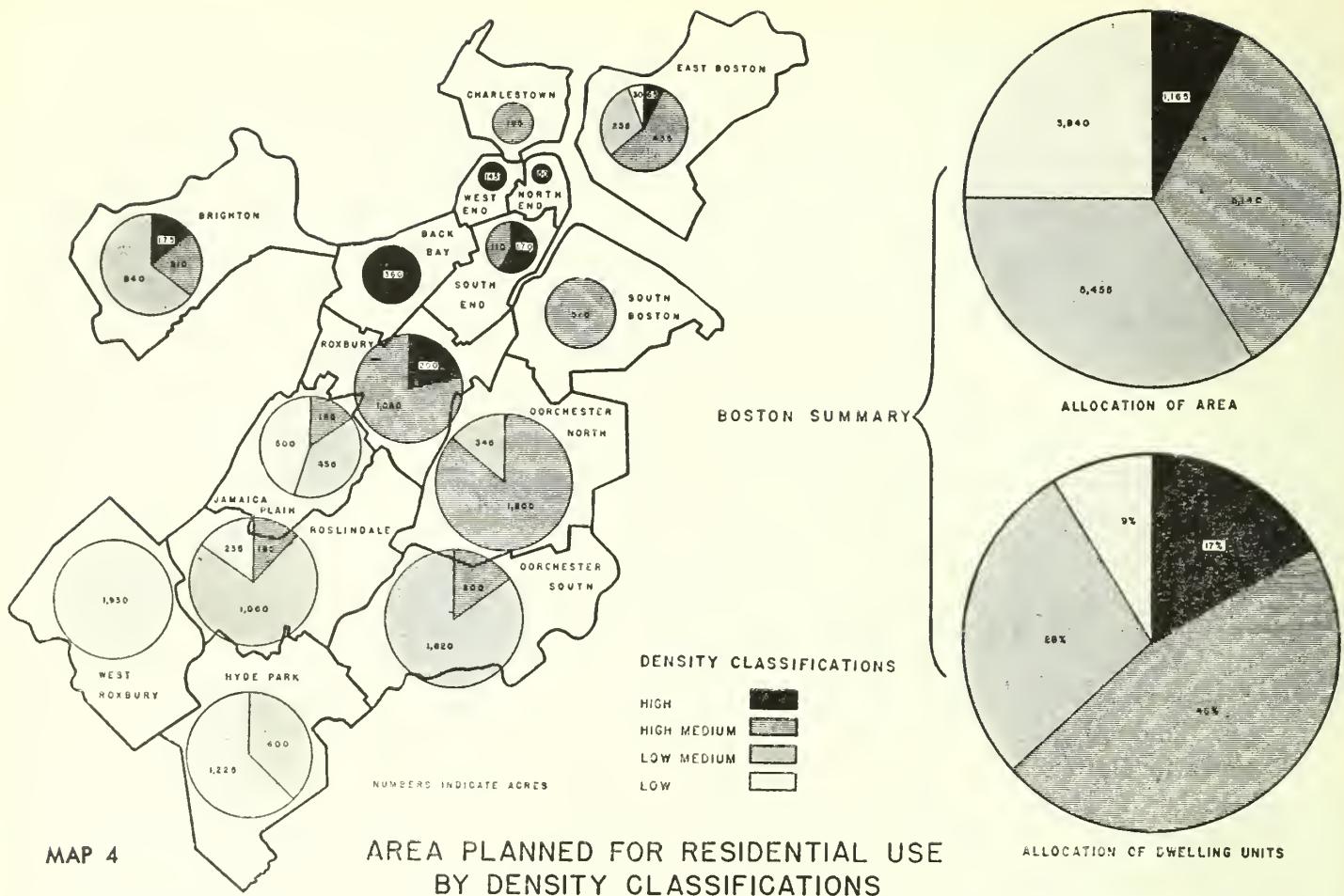
This design for residential land-use is admittedly generalized. More detailed and more localized studies will be necessary, to show the boundaries more precisely and to guide rezoning. This general pattern is, however, the essential

first step, and an adequate basis for the similarly generalized other phases of this comprehensive plan.

### REDEVELOPMENT AND CONSERVATION

Within the framework of the over-all residential area plan, most of the parts are fixed for many years to come. The vacant areas are subject to new planning. At the other end of the scale, slum areas are also subject to complete re-planning as they are cleared for redevelopment. An important aspect of this plan is the determination of these redevelopment areas: the sections that require large-scale demolition in order to wipe out extremes of blight that levy severe social and economic costs upon the balance of the city.

The urgency of clearing the city's slums is generally accepted. These are areas that are a liability to the community as a whole, in every sense. Statistical studies, in Boston as in other cities, show them to be breeders of juvenile delinquency and crime, centers of social and family disorganization. In large measure, substandard housing and neighborhood environment, along with poverty, have been demonstrated to share the blame for these social evils. High rates of disease and death can also be traced to slum conditions. The costs of these factors in many cases cannot be measured in dollars, but they are nevertheless real, and well beyond what the community can afford to pay. Such costs as those for excessive

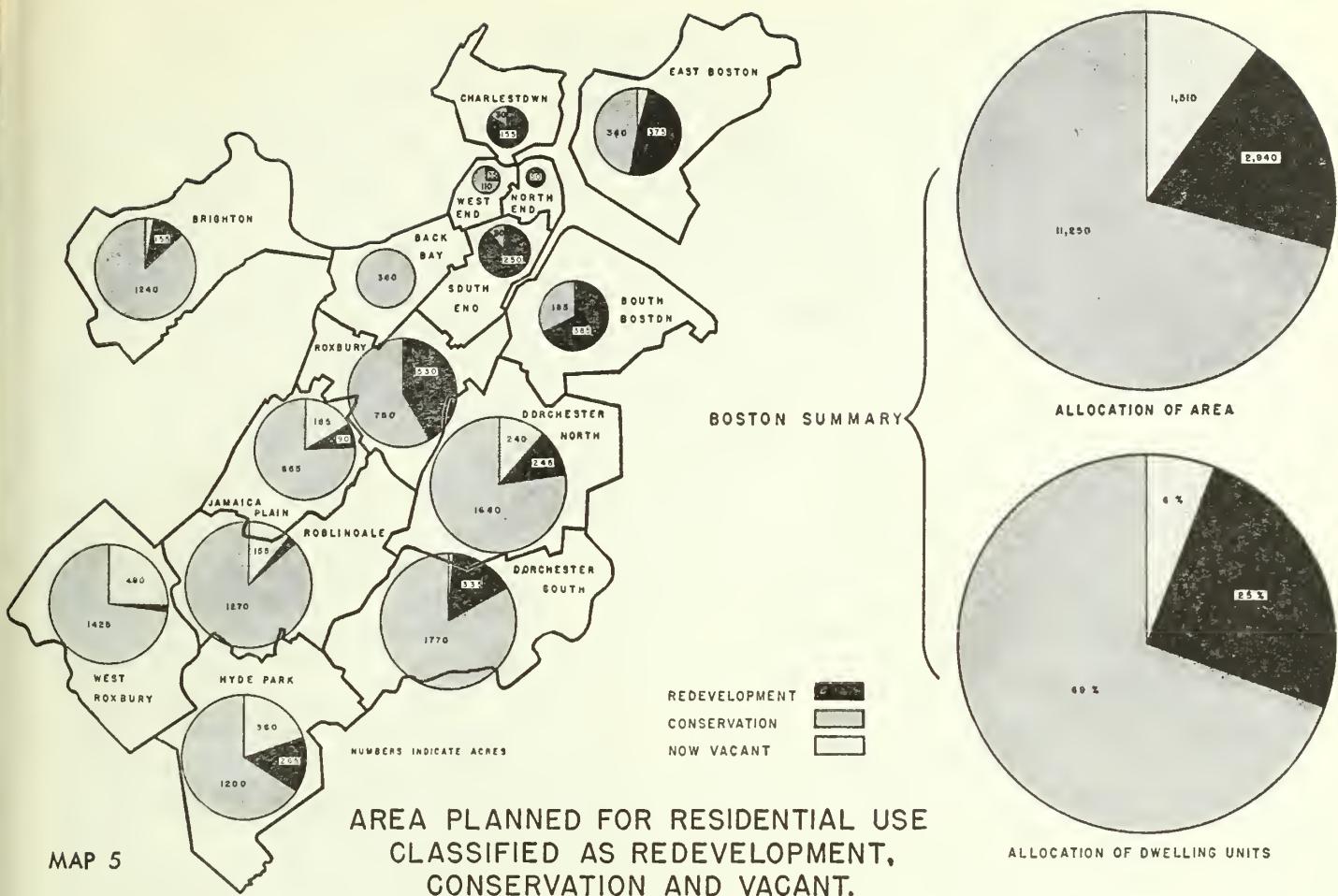


fire protection and other public services, directly due to bad physical conditions, are more readily calculable and were clearly set forth in the Survey of Income and Cost of the various parts of Boston made by the City Planning Board in 1934.

The machinery for accomplishing slum clearance has been greatly improved by the passage of the U. S. Housing Act of 1949, which provides Federal financial aid for cities in buying up slum areas and preparing them for redevelopment, as well as aid for public housing for low-income families. This law recognizes that public housing is not necessarily the best reuse for cleared slums; business, industry, private housing, or parks may meet better the community's needs. This General Plan is being prepared as a guide, not only as to what areas should be cleared, but also as to their best reuse. Under Massachusetts law, the Boston Housing Authority has responsibility for putting this urban redevelopment procedure into effect, buying and clearing slum areas, disposing of them to private or public redevelopers for construction under this General Plan, and rehousing the displaced low-income families, either on the same site or elsewhere.

A number of approaches were made to determine the location and extent of these clearance areas, based on earlier studies made by the City Planning Board. Factors of blight that could be measured included: 1. The condition of residential buildings (based on 1940 census counts of dwellings needing major repair or without private bath); 2. The age of buildings; 3. The rent (low rent having been demonstrated to be closely related to such substandard housing conditions as lack of sanitary facilities or central heat). In lieu of a detailed and costly survey of neighborhood conditions, a study was made also of substandard densities, measuring the extent that densities exceeded the standards set up by the American Public Health Association's Committee on the Hygiene of Housing. These data, analyzed block by block, resulted in the marking out of areas so clearly substandard in building conditions and spacing that sweeping clearance of buildings is the only way they can be restored to social and economic health (see map opposite page 46).

Some 1,100 acres where conditions are particularly bad were typed as "high priority" redevelopment areas. These are the sections where



public action should be concentrated first. They will probably absorb all of the financial resources that can be applied to slum clearance for a number of years to come. The remaining 1,600 of the total 2,700 acres of redevelopment areas will have to wait for attention. It is possible that by the time they can be attacked, they will have deteriorated still further until they are as bad as the present high priority areas are now.

About 11,000 acres of the residential area that is planned for continued residential use is in too good condition to require wholesale clearance. Some of this is new construction, some is old but in good condition, some merely a little old and shabby, and some is moderately blighted. These are grouped as "conservation" areas, which will remain substantially in their present condition during the next 25 years, subject only to minor improvements and small-scale normal change.

Map number 5, above, shows how much of the planned residential area in each of the sections of Boston is now vacant, how much is for conservation, and how much is planned for redevelopment.

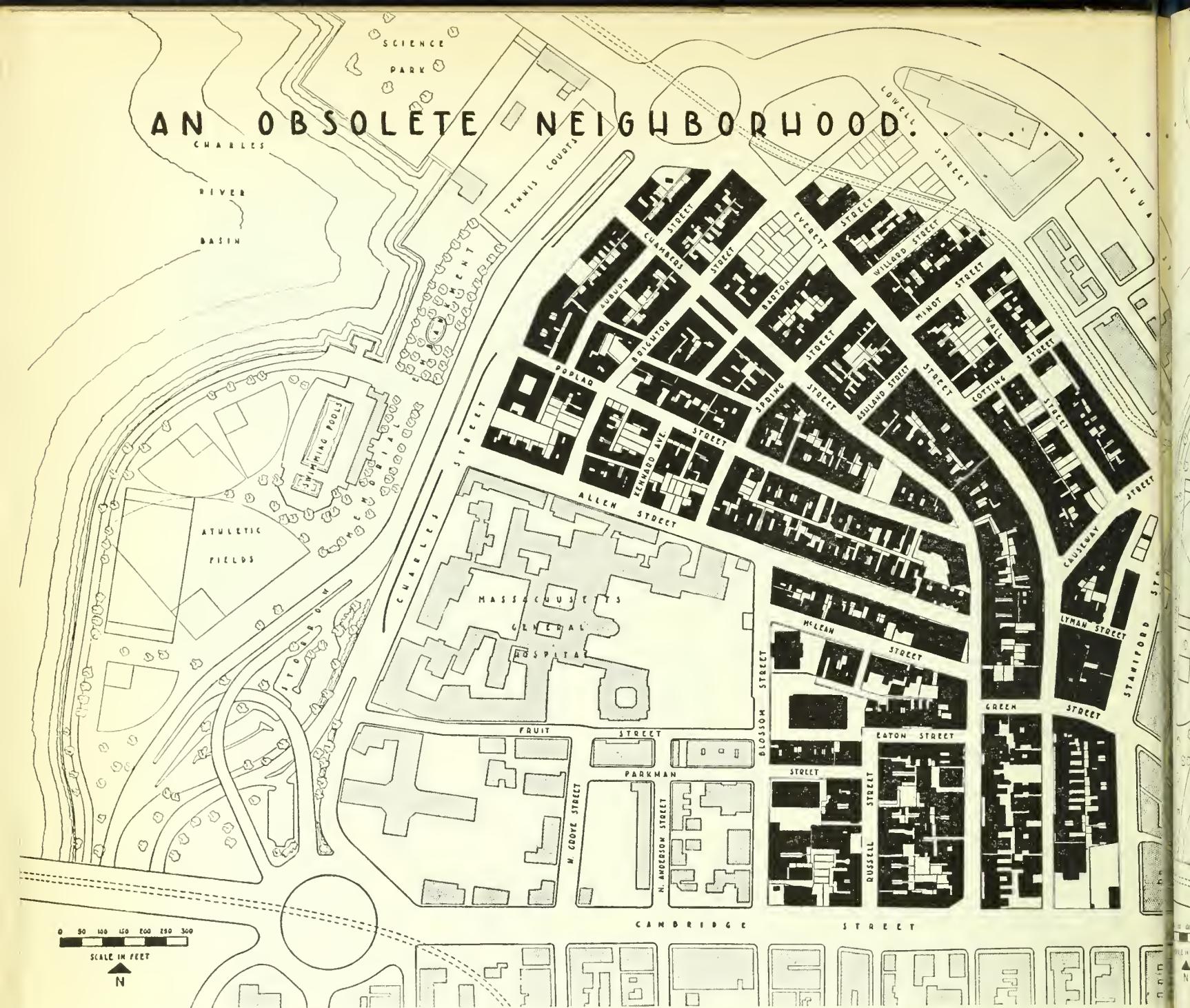
The land-use plan (insert) shows not only the areas marked for residence, but also the planned

densities for these various areas. The four density ranges discussed above are used to show the general character proposed for each part of the city.

The conservation areas must perforce be planned for their present densities, since they will remain as they are for the period of the plan (they may, however, lose some of their population due to land taken out of residential use for express highways, essential playgrounds, and other needed improvements, which will to some extent reduce the effects of present overcrowding).

The vacant areas and the redevelopment areas offer a chance to plan for new densities. The residential plan, in recommending density classifications, was partly influenced by the overall required proportions of the density districts discussed above as required to meet the needs of the 1975 population composition. Also significant were the "site advantages" of various parts: the West End, near downtown, clearly justifies high densities in its rebuilding; an example of the type of rebuilding that might be appropriate for this area is shown on pages 42-43. In West Roxbury, the character of the terrain and the established pattern indicate lower density ranges.

# AN OBSOLETE NEIGHBORHOOD.



MAP 6

3500 FAMILIES

DENSITY — 112 FAMILIES PER NET ACRE

BUILDING COVERAGE 55%

EXISTING BUILDINGS

INSIDE PLAN AREA



ELEVATED RAPID

TRANSIT STRUCTURES

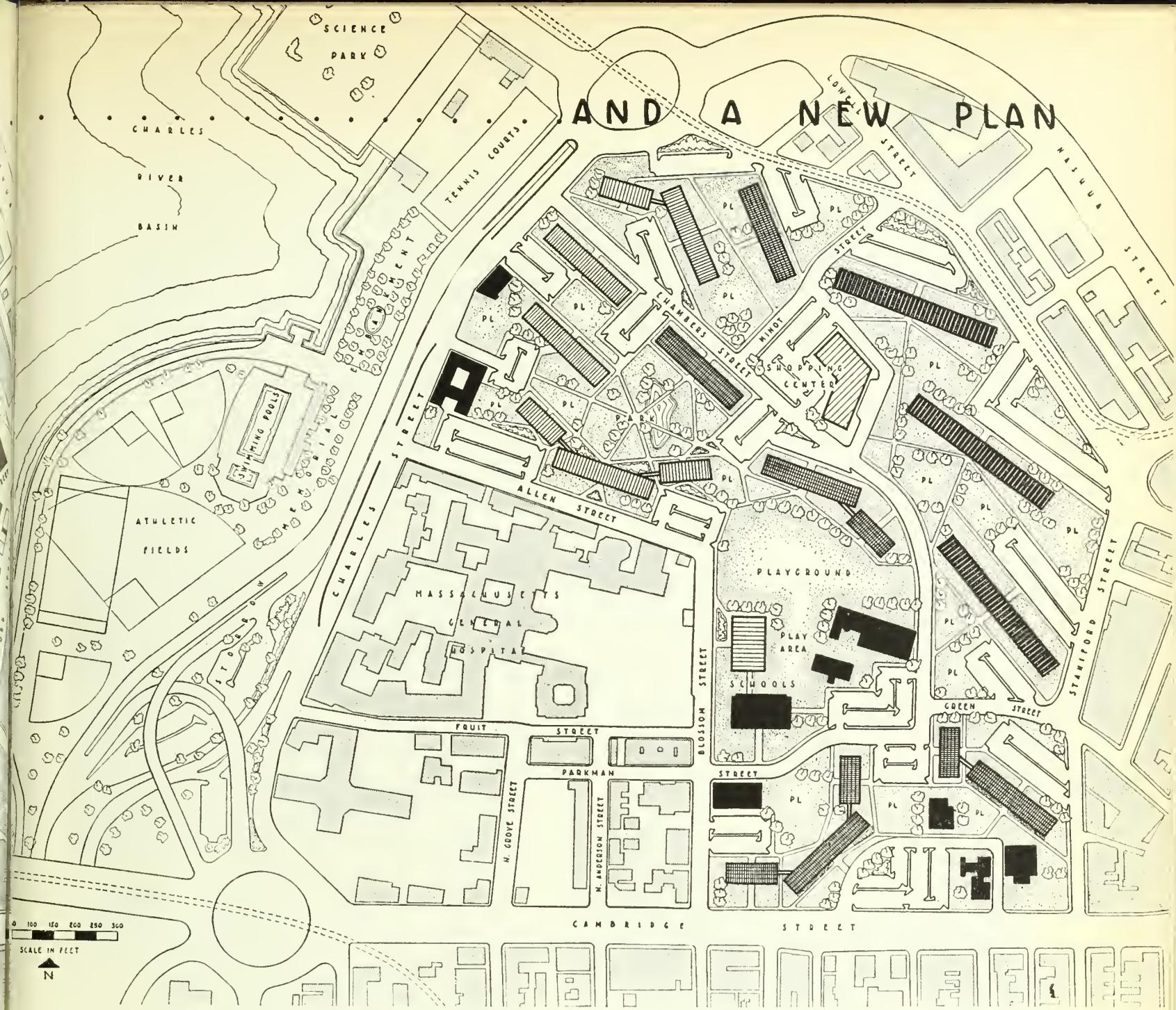


OUTSIDE PLAN AREA



This crowded housing area is in the West End, virtually in the heart of the city. Its proximity to the business and amusement center helps to justify its high population density, but the extremely high building coverage does not allow sunlight and air to enter dwellings, and affords no possibility of a view. There are no pleasant open spaces within the area where children may play, or where adults may enjoy the outdoors. No parking space exists, except on narrow streets and vacant lots.

Such an environment undoubtedly impairs the mental and physical health of its inhabitants, and moreover, there are indications that such an area is a deficit to the city in terms of cost of city services versus tax revenue.



MAP 7

2000 FAMILIES

DENSITY — 65 FAMILIES PER NET ACRE

BUILDING COVERAGE 17%

NEW APARTMENT BUILDINGS

6 STORY

13 STORY

9 STORY

OTHER NEW BUILDINGS



CHILDREN'S PLAY LOTS PL

This scheme utilizes economically efficient 6, 9 and 13 story elevator apartments of exciting contemporary design. Building coverage is thereby reduced 68%, but with only 40% fewer families. Some existing buildings of sound construction and historic value are retained, along with only  $\frac{1}{2}$  of the old streets, while no new streets are added. The result is ample open space for playlots for children and passive recreation areas for adults. Landscaped interior walkways afford pedestrian circulation systems which cross a minimum of streets. Buildings are orientated for sunlight and views of Storrow Memorial Embankment and Science Park. Offstreet parking is provided for more than 50% of all families.

We now have an environment which suggests good mental and physical health, and an area which should be less of a financial burden to the city in the long run.

The resulting plan adds up to the following totals:

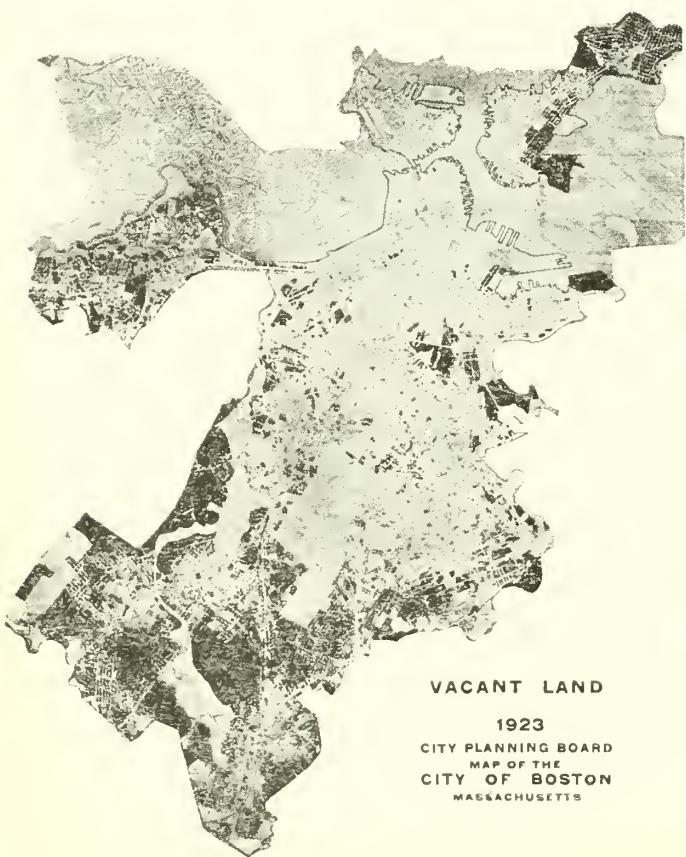
Low Density . . . . .	4,000 acres
Low Medium Density . . . . .	5,500 acres
High Medium Density . . . . .	5,200 acres
High Density . . . . .	1,200 acres
<b>Total Residential Areas . . . . .</b>	<b>15,900 acres</b>

The map on page 40 shows how these areas are divided among the sections of Boston.

It is worth noting that there are exceptions to the general rule that the older a section is, the more crowded and the more dilapidated it is. The Back Bay is a high density area, but it is not a redevelopment area, while many sections of lower density are. This is because, in addition to being soundly constructed, the Back Bay has proved to be readily adaptable to changing kinds of occupancy; it is old but not obsolete. This illustrates the importance, for the preservation of permanent values, not only of building according to good general standards, but also of planning and building according to standards that are appropriate or adjustable to the character of population that will live there.

Taken into account to some extent was the relation of site land costs to density. Analyses were made of the effect on rents of varying land costs and different densities for both private and public housing, the results of which indicate that it would be unrealistic to propose such drastic reductions in density in any area as could be achieved only by providing prohibitively large subsidies. By the same token, a strong argument against substantial increases in density in areas where the pattern of public services is already set is the great new burden that would result from additional public utilities, new schools, and larger recreation areas that would be necessary to serve a much larger population. All of these factors have a bearing upon the decisions made as to recommended future general densities throughout the city. Each requires more exhaustive analysis before final decisions for any specific project or small district could be soundly made. This re-emphasizes the close tie between the population studies and the residential land-use and density plans.

The plans for residential land-uses and densities are, in effect, recommendations or predictions of the size of the population in each part of the city. Such predictions are essential as the basis for a number of other features of the general



MAP 8



MAP 9

plan, such as the size and location of different types of play area, which must be tied in with the number of children within walking distance; the location and size of schools; the frequency and spacing of shopping districts; and the layout and scope of other systems of services and utilities.

The total number of people in Boston is not nearly as important as the *quality of living and of services* provided for these people. The 1975 population under this plan, however, can be calculated approximately, and, based on average densities in each density range, comes out about 710,000. (If densities within each range should work out above or below the midpoint, the figure might be higher or lower.) This includes not only the population of the residential areas, but also the "institutional" population, and the persons who will still be living in what appear on the plan as nonresidential areas, such as downtown hotels, flats over stores in business centers, and transitional areas only partly absorbed by other uses.

The Planning Board is not alarmed that the population forecast shows a possible loss of as much as 80,000 from 1950's 790,000, because it is believed that this plan will provide, for whatever number may result, improved levels of health, convenience, comfort and good living, and greater economic security and stability than Boston people now have. Some reduction in population is very probably essential to achieve these goals.

Furthermore, it is reasonable to assume that Boston is quite likely to lose population, whether this plan is put into effect or not. Indeed, the

loss may be greater if the planned improvements are not made. The populations of all large cities in recent years have shown a definite trend out of congested central sections, due to the greater attractiveness of suburban areas as places to live.

Study of the 1950 population figures indicates a strong outward movement from Boston since 1940. Although 55,000 more people had been born than had died in Boston in the decade 1940-1950, the city's total population increased by only 20,000. This means that 35,000 more people moved out to the suburban region or other parts of the country than moved in. After 1950, the predicted number of deaths in Boston will increase, and may exceed the number of births. If this should happen, the total population would decrease, even if the past trend of out-migration were stopped. This means that probably an excess of in-migration might be necessary, merely to maintain the 710,000 figure estimated in this plan.

It is clear that an improvement in the quality of Boston as a place that is attractive for self-sustaining families to live is essential to counteract to some extent the pull of the suburbs. Our plan is aimed in this direction. This analysis also suggests the extent to which the affairs of the central city and the suburbs are entangled, as families move from one to the other seeking the various kinds of living that different parts of the metropolis afford. It strongly indicates the need for metropolitan planning and collaboration among the communities of the metropolitan area in order to meet efficiently the changing needs of the people of this great urban community.

### 3. CARRYING OUT THE RESIDENTIAL PLAN

The people of Boston have at hand various tools for putting into effect the changes and improvements recommended by the plans proposed for residential land-use and population density. These tools can accomplish much if they are properly used, and if the community decides to use them. There is still, however, a substantial gap between the generalized and frankly sketchy features of the plan as here presented and the detailed blueprints necessary to guide the use of these tools.

The basic tool is zoning, which directly regulates the use of land and the density of population for all future construction. Boston's zoning

regulations, adopted a quarter of a century ago, were obsolete even before the completion of this General Plan. As has been suggested, the proposals here presented offer a guide for the restudy of the city's zoning map, revising the boundaries of the various districts. They also suggest revisions of the text of the zoning law, establishing more direct controls over densities, expressing these controls to reflect the density standards, modernizing regulation of yards, courts, and building spacing, requiring off-street parking, and in other respects conforming to modern zoning trends. Another important feature should be effective methods of eliminating nonconforming uses. Both map and

text changes require a substantial amount of detailed study by planning technicians, plus work with property owners, neighborhood organizations, civic leaders, and professional groups, to bring them to readiness for legislative action.

Within the framework of a modernized zoning statute, more positive steps will be required to bring about the changes proposed by this plan. Slum clearance, for which all necessary legal foundations have been laid, is the responsibility of the Boston Housing Authority, which has already made significant progress in replacing a number of slums with public housing. The Authority faces a serious problem in finding sites for additional construction that can be developed at standard densities without excessive cost. It is now faced also with the new function of land clearance and disposal for slums whose new use should be something other than public housing, and in relocating the displaced low-income families. In selecting project areas for this urban redevelopment and determining standards for reuse, the experience of other cities has demonstrated how closely this function meshes with city planning. In Boston, major work remains to be done both by the Housing Authority and by the Planning Board before urban redevelopment can become a reality.

Land now vacant offers the only other opportunity for major changes in the city's residential areas. Though there is comparatively little, there is yet enough to justify establishing and enforcing high standards of modern subdivision control, to assure that, as this land is developed, it conforms to the objectives of this plan. This is a planning function, and appropriately should be performed by the Planning Board, which requires further statutory authority to allow it to do this job. (Compare maps 8 and 9, page 44, for loss of vacant land in recent years.)

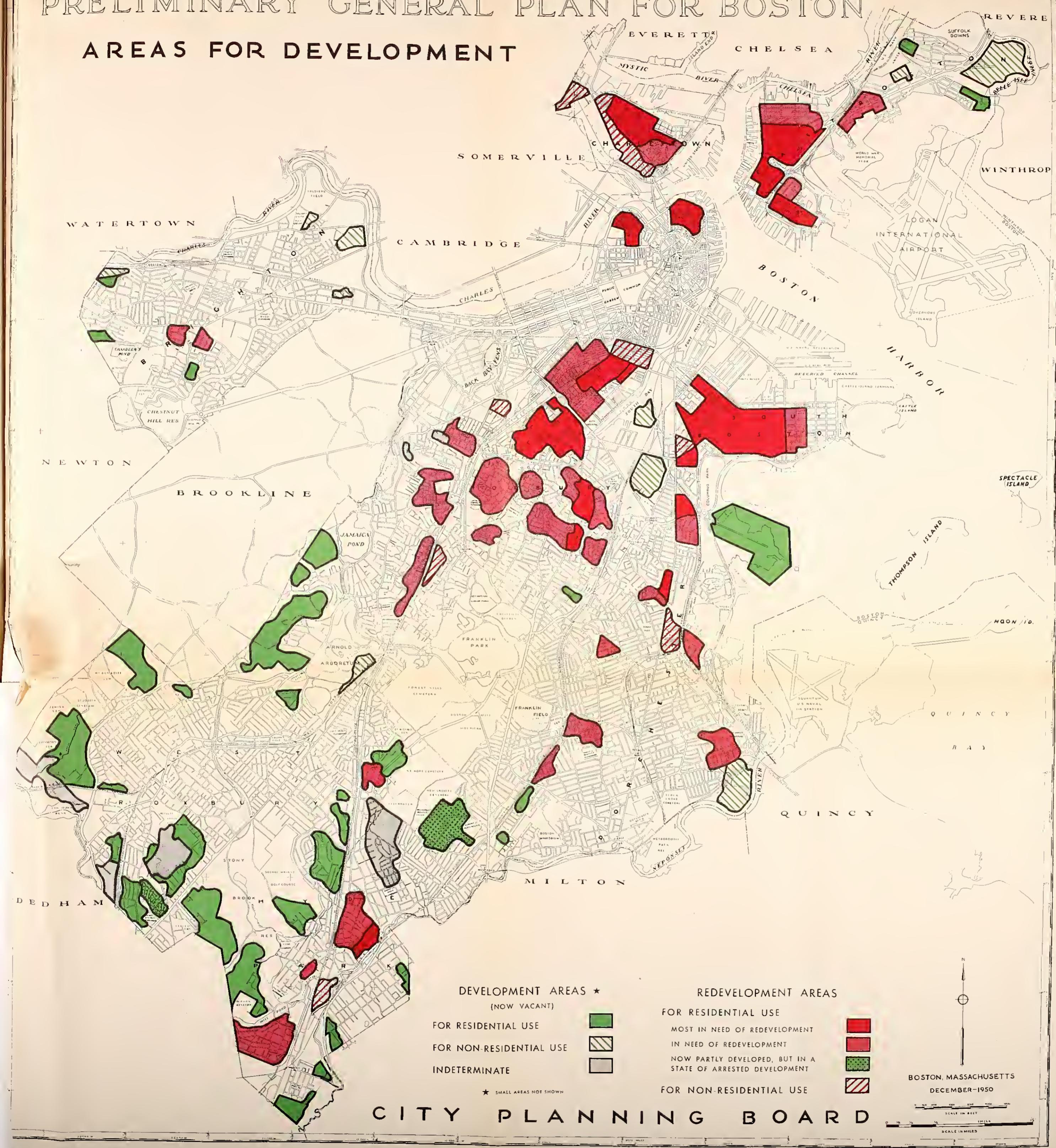
Between these two extremes of vacant land and slum clearance lies the great majority of Boston's residential areas — the conservation areas. Here drastic changes are not needed. Direct governmental action is not required beyond the providing of necessary public services and facilities: schools, playgrounds, and utility and safety services. Protective measures, however, are very necessary to resist the encroachment of blight. In addition to modernized zoning, a rigorous program should be undertaken of enforcing building, health, and fire codes and assuring a high standard of such municipal housekeeping services as garbage collection. These public measures can be of little effect in stemming the tide of blight, however, without the full participation, even the leadership, of property owners and residents of conservation areas. Private property maintenance and responsible neighborhood housekeeping must balance the public efforts.

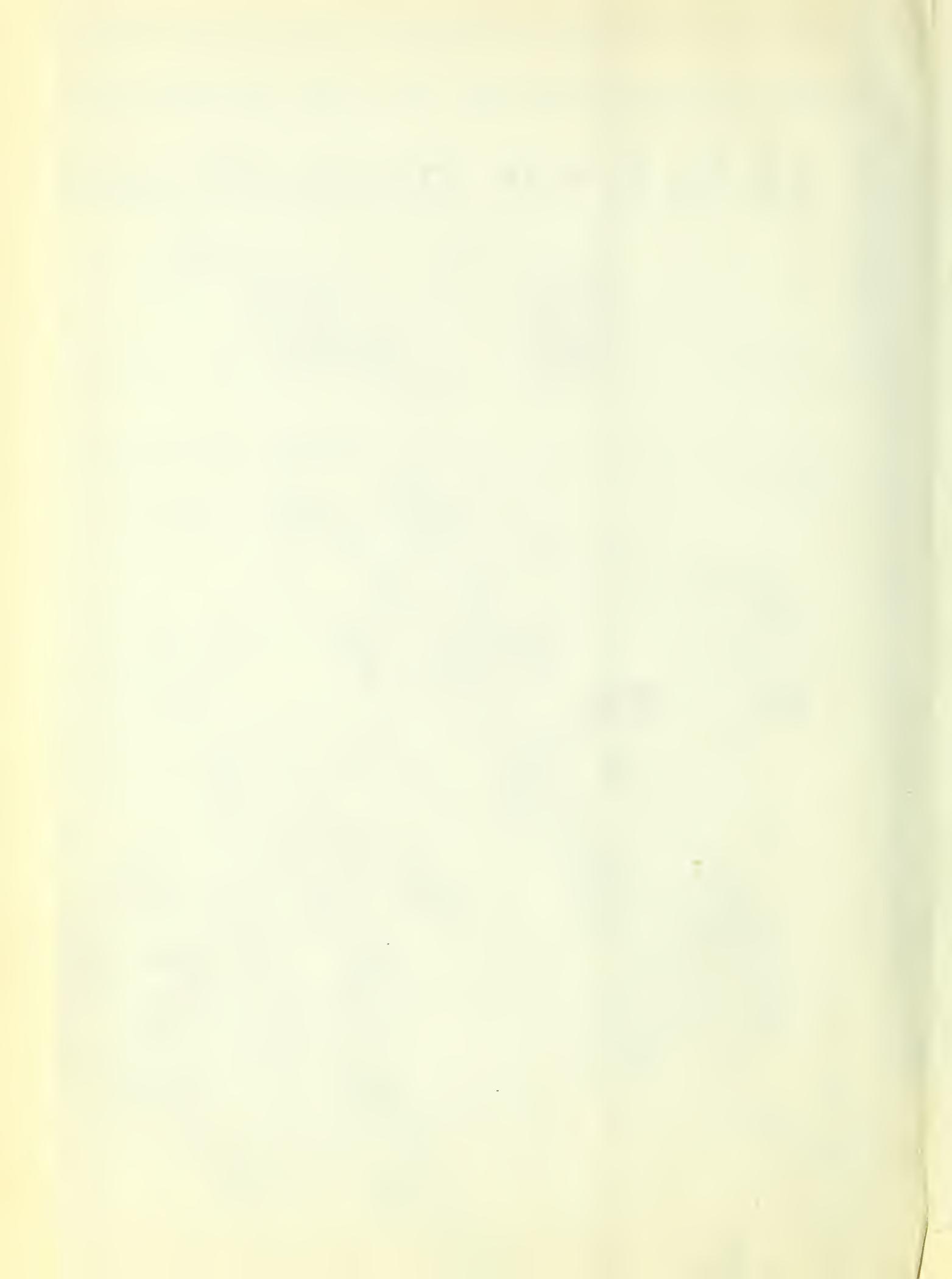
A program of organized neighborhood conservation is strongly recommended, to preserve and enhance living conditions, property values, and tax resources of the community. Such an effort might be sparked by the Planning Board itself if it were granted adequate staff, or by some as yet nonexistent civic organization. It is a major undertaking, requiring an investment larger than the Board's entire current appropriation for each of many years to come; but this is cheap insurance in contrast to the loss in private and public resources that is sure to result from further blight, if some such program is not soon started.

All these measures are logical next steps toward bringing into reality the recommendations of this General Plan. All are essential, if Boston is to recover and retain that quality of community life which will meet the needs of the present population, and justify the expectation that the city will keep as residents the future population here predicted.

# PRELIMINARY GENERAL PLAN FOR BOSTON

## AREAS FOR DEVELOPMENT





# III. SCHOOLS AND RECREATION

---

## 1. RELATIONSHIP TO THE GENERAL PLAN

A general plan is a broad concept of the manner in which the urban community of the future will perform such of its basic functions as can find expression in terms of land-uses and public service facilities. Education and recreation, necessary to the healthy development of mind and body, are such functions, and their site requirements are an important part of a complete plan. Sound planning of school and recreation areas is conducive not alone to preservation of human values but to the progressive development and

maintenance of private property values at a high and stable level. Plans for unified neighborhoods and communities are influenced strongly by school-location factors and the aesthetic and buffer values inherent in recreation areas have been recognized from time immemorial.

The preliminary school and recreation plan presented at this time is limited to a description of general objectives and a schematic proposal for such an advance toward these goals as may be practicable over a 25-year period.

## 2. DEVELOPING A SCHOOL PLAN

### OBJECTIVES AND STANDARDS

**Elementary Schools.** Public responsibility for education of the young, at least between the ages of five and sixteen, is the very keystone of our social structure. A locally controlled public school system providing education at three levels seems to be standard practice. This is the so-called 6-3-3 system. Elementary schools, exclusive of kindergartens, provide for the first six years of education and from the standpoint of distribution, at least, are probably the most important part of the system. Since they serve the youngest children and tend toward uniformity in the character of instruction, these schools should be located so as to provide all the advantages of accessibility which are consistent with sound principles of administration and economy.

In general, children should not be required to travel more than one-half mile to an elementary school; in congested areas this should be reduced wherever possible, though where population is sparse and hazards are few it might be increased within reason. Traffic and other barriers, as well as distance, must be considered in determining accessibility.

Recognized authorities have recommended that elementary schools in urban areas have a capacity of not less than 400 nor more than 800 pupils. Obviously, this principle of sound and economical administration is a factor of some importance in the locating of school sites.

Every elementary school should have a site of not less than two acres. If the school site adjoins a playground intended for general neighborhood use (and this is a most desirable objective), the total area should be at least five acres. Naturally, these principles exert strong influence on the planning of a school system, especially in such a city as Boston, where suitable sites of five acres are rarely obtainable, particularly within developed residential areas.

**Junior High Schools.** Upon completing elementary school the average child is 12 years of age and ready for 3 years of a somewhat more specialized and highly developed form of education. This can usually be offered more advantageously in a larger, better equipped building. Hence, there is every justification for relatively few, more

widely spaced schools at this level, though accessibility is still of primary importance.

Junior high schools should be located within one mile of every home, wherever feasible. They should have a capacity of 800 to 1,500 pupils and a minimum site of four acres. Wherever possible, they should adjoin a playground or other area for active recreation.

**Senior High Schools.** The last three years of public school education, usually for young people between 14 and 18 years of age, are provided in large buildings, where location and accessibility are of lesser importance. The distribution of these

senior high schools is less susceptible of influence by fixed principles and has a less serious impact upon the other land-use elements of the General Plan. No attempt, therefore, has been made at this time to devise a schematic proposal for a future senior high school system. It seems enough to say that in a large city like Boston there is room both for the general high school found in and intended for the outlying districts and the specialized type located in the central area, such as the Latin School, the High School of Commerce, the Technical High School, and the High School of Practical Arts, which offer specialized training to students from all parts of Boston.

## THE FUTURE DEMAND FOR SCHOOLS

A school plan for the future must result largely from applying desirable design standards to an estimate of probable demands for school facilities.

The General Plan proposes that by 1975 some 16,000 acres in Boston will be "inhabited area" of a stable, predominantly residential character, but with varying densities of population. In addition, scattered residences in areas of a predominantly commercial character will probably persist. The distribution of children will vary, being strongly influenced by the character of the residential developments. For example, it is expected that the greatest numbers of children will be found not in the high density areas of tall apartment structures, but in certain of the lower density types, where conditions are more conducive to the raising of families.

In considering future school requirements a factor of great importance is the variation in ratio of children to total population. Everybody with an interest in population trends knows the history of the birth rate during the succeeding years of the depression, World War II, and the postwar era. Population forecasts made 10 years ago have been scrapped and the anticipated *national* stagnation and decline have been postponed indefinitely. In a much smaller unit of population such as Boston, however, national averages mean little or nothing. It is important to note that the proportion of school children to total population in Boston has been declining for 20 years. In 1950, with more people than ever before, Boston, nevertheless, had 39,000 fewer children in its school sys-

tems, public and parochial, than in 1933. Probable future trends in school enrollments, reflecting the upswing in the birth rate of the postwar years and the determinations of future population underlying much of the General Plan, are shown graphically in figure 7.

It is a basic principle in planning a school system that public education must be available for every child who is not voluntarily cared for by some other system. Private facilities, accordingly, must be given proper evaluation. In Boston, Roman Catholic parochial schools constitute the principal alternative to public education. The parochial school system is still based on the eight-grade grammar school and the four-year high school. In 1949 about 30% of all Boston

SCHOOL POPULATION 1930-1975

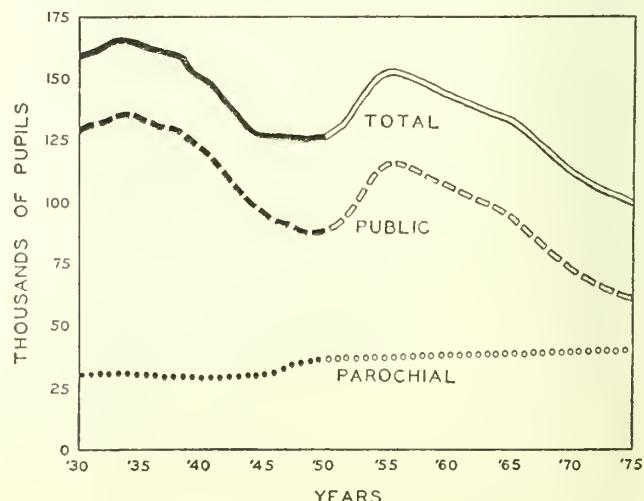
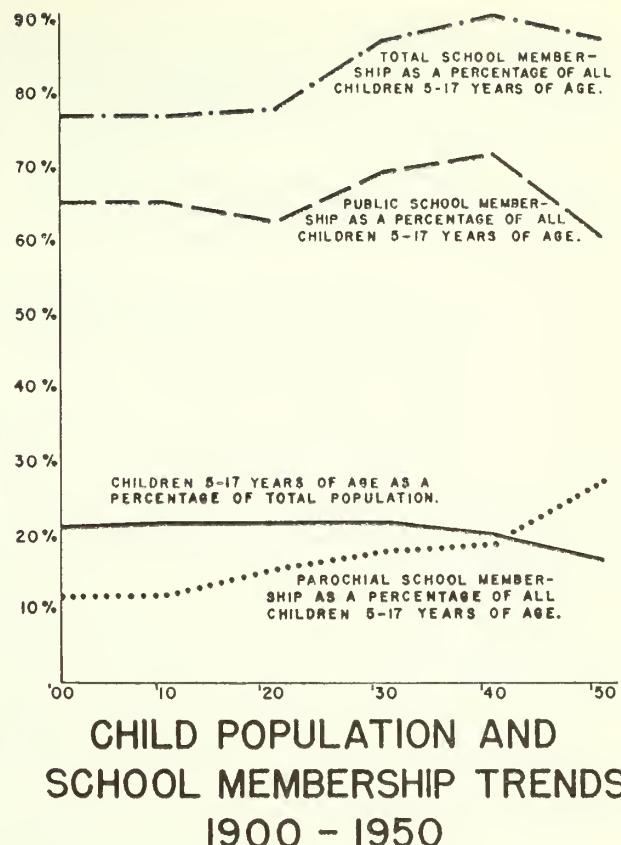


Figure 7

children in the first six elementary grades were in parochial schools; the figure for high schools being 23%. This great contribution made by parochial schools varies from one section of the city to another; in South Boston, Charlestown, and Jamaica Plain, nearly half of the children attend parochial schools, while in Roslindale, West Roxbury, and parts of Dorchester and Roxbury, the number is less significant.

For the city as a whole, it is important to note that while public school enrollments have suffered a serious decline the parochial schools have managed at all times to hold theirs at a high level and in recent years have even shown a remarkable gain in the number of pupils, due in part to the construction of additional schools. The graph on page 48 shows the public schools to be very sensitive to child population trends, and the public system must remain flexible to meet both the inevitable increase in demand which according to census figures will soon be apparent, and its probable aftermath of decline.

The future of the parochial system is not, of course, appropriate subject matter for public planning. Justification does appear, however, on the basis of the actual record over 20 years, for supposing that the parochial schools will continue to increase their present enrollment even in the face of further decline in the total child population. If this supposition is correct, the public



CHILD POPULATION AND  
SCHOOL MEMBERSHIP TRENDS  
1900 - 1950

Figure 8

schools of Boston probably will not again attain the peak enrollment of 1933 and by 1975 may actually have fewer pupils than in any previous year of this century.

## EXISTING SCHOOLS IN THE FUTURE SYSTEM

In such a city as Boston, where there exists only limited opportunity for extensive new developments on vacant lands, any realistic school plan for the future must be a compromise between an optimum design based on ideal objectives and the more tangible facts of an existing school system. A careful evaluation of the present system's potential for meeting future requirements is of the highest importance.

Boston had, in 1949, public elementary school facilities at 172 different sites. Thus, each site served, on the average, only 300 children in a residential area of only 93 acres, figures which indicate that the present distribution of elementary schools in Boston is, at best, only 50% efficient, from the standpoint of site location. Only two of these sites were larger than the minimum standard of

two acres; and the total inadequacy of sites is better told by the facts that fully 131 were smaller than one acre and 40 were actually less than one-half acre.

For both junior and senior public high schools the situation is similar to that of the elementary schools, in that the areas of the various sites are considerably less than the recognized standards.

Public schools of all types in Boston have a total functional capacity \* of 127,712, with a current enrollment of only 91,000 pupils. Though these buildings represent an original investment of about \$44,000,000 and replacement cost today would be at least several times this figure, no fewer than 84, or 38%, are 19th-century structures, which have certainly outlived their intended period

\* As reported by the office of the Superintendent of Schools.

of usefulness. The city must, in any case, undertake in the near future a program of school construction for the sake of modernization. All the circumstances seem conducive to effectuation of

an over-all plan which, through consolidation of existing facilities on the one hand and new construction on the other, will benefit both the education system and the taxpayers.

### 3. A SCHOOL PLAN FOR 1975

#### COMPOSITION

In devising a future school plan faithful adherence to the following principles has been observed:

1. Accessible public school facilities to be provided in all those parts of the city which are intended to be residential in 1975.

2. The 6-3-3 system of education to be maintained, but the use of elementary school buildings for junior high classes to be eliminated.

3. Maximum coordination practicable to be achieved between school and recreation systems.

4. Elementary schools to be so located that the number of children within one-half mile radius and not having to traverse important barriers will be a maximum; junior high school pupils to be within one mile radius of school.

5. Elementary schools to be so distributed that few will have probable enrollments in excess of 800 or below 400, with due regard for services rendered by parochial schools in the various sections of the city.

6. Existing facilities to be incorporated into the proposed system, so far as their usefulness and condition seem to allow or require; no existing facility to be eliminated unless it is clearly advantageous to do so; acquisition of new sites to be held to a minimum.

7. Fullest advantage to be taken in areas intended for new residential development or redevelopment of opportunities to provide practical improvements in school and recreation services.

The resulting plan contemplates a very substantial change in the elementary school system, *a change which should be accomplished gradually and in harmony with other developments based on the*

*General Plan.* Instead of facilities at 172 locations as at present, only 100 sites appear to be necessary for the future. Of these, 81 are existing and 19 proposed. Junior high school classes are now conducted at 35 locations; 21 of these would be retained and three new locations added.

Of the existing elementary school locations to be retained 74 appear to have buildings which, in terms of capacity, should be adequate for the future. The total 25-year program for new elementary and junior high school facilities takes initial form as follows:

*22 new sites to be acquired, of which 8 are in areas of new development or redevelopment and 7 are in existing recreation areas. Only 4 of the 22 appear to offer serious acquisition problems. 29 new buildings or substantial alteration projects to be undertaken, which will ultimately provide facilities for an estimated 15,000 pupils.*

In addition, nearly all of the existing school locations to be retained are grossly inadequate in size, and every effort should be made to bring them up to standard, as opportunity affords.

These school plan proposals may be compared with those of the comprehensive survey of Boston schools undertaken by the Finance Commission in 1944, with the consultant services of Dr. George D. Strayer. That report included a long-range plan calling for approximately the same number of elementary school locations as are now recommended by the City Planning Board, but retaining fewer of the existing schools and hence requiring acquisition of more new sites. It should be noted too that Doctor Strayer's proposals were intended to satisfy about the same service requirements which prevailed in 1944, whereas the City Planning Board's plan covers more residential area, but fewer pupils.

## BENEFITS OF THE SCHOOL PLAN

Effectuation of the school plan presented herein will prove costly, but the practical benefits should not be overlooked. This plan offers:

1. Annual savings in operation and maintenance of discontinued schools which will make a material contribution toward the provision of the new, modern facilities which are so badly needed;

2. Advantages in administration and education which are inherent in a system comprising fewer, but larger, schools; more efficient assignment of pupils to teachers should be possible; better equipment and all-around facilities can be justified;

3. School site improvements, which will make possible more effective school recreation programs; and the use for general recreation of many sites discontinued for school purposes;

4. Opportunity in redevelopment areas to expend the required local "grants in aid" for a most worthy cause, namely, replacement of obsolete school buildings with modern structures; and

5. A chance to advance toward development of unified neighborhoods and communities by providing in many cases the essential nucleus for general improvement.

As stated at the outset, the school plan merely outlines general objectives and offers a schematic proposal to guide the more detailed planning which must follow. Perhaps no other field affords such excellent opportunities to demonstrate the practical value in planning. The City Planning Board points to the necessity for close collaboration among all the parties concerned, if the full benefits of good school planning are to be secured for the entire community.

## 4. DEVELOPING A RECREATION PLAN

### GENERAL OBJECTIVES

City planning principles are founded upon the basic requirements of human life. They are intended to guide the fashioning of a physical environment in which the individual and society alike may grow healthy in body and spirit. A city inevitably reflects its people's philosophy of life. The price of a dominant materialism may come high in terms of drab monotony or even sheer ugliness and their resultant effects in disease and demoralization. As a constructive offset to this unfortunate condition, a community which is awake to these dangers will assume as a public responsibility, and to the extent that it may be necessary, the obligation of providing an adequate recreation system. Such a system should afford not only the physical facilities for regeneration of the body through active play or quiet rest, but also a contribution toward that ennobling of the spirit which is so dependent upon a sense of beauty. The responsibility for recreation, as for schools, has been shared by public and private agencies; though unlike education, it has not rested on such stringent legal compulsion. The City Planning

Board believes that the time has come to give more adequate recognition to the importance of recreation and has adopted that principle in formulating its General Plan.

### AREAS — TYPES, STANDARDS, EXISTING FACILITIES

The objective of recreation planning is not merely the providing of accessible open space for every person in the city; it is the development of a *coordinated system* which will be complete, functionally and economically efficient, and properly balanced. The variety of purposes inherent in a recreation program is manifest in its diversity of characteristic facilities. Balance and efficiency in a system can be achieved only through proper evaluation of their relative importance and their interrelationship. The recreation planning procedure, then, is like that used for school planning: definition of the various types of areas by describing their functions and applicable design and distribution standards; appraisal of probable demand for recreation services; and full consideration of the future use potential of existing facilities.

**Playgrounds.** The most important among areas for active recreation is the playground, originally conceived as primarily for children 6 to 15 years of age, but more recently considered for general use. The playground, with the elementary school, has been regarded as fundamental in the planning of neighborhoods. The division of Boston into neighborhoods is not attempted in this preliminary General Plan, though the importance of such a step in the planning process is fully appreciated. Hence, a concept of the functional character of a playground system (and of the other forms of recreation as well) has been developed which is more in keeping with the scope of the present planning study. The result is a playground plan which, rather than an attempt to show specific sites and areas, is a schematic diagram of distribution of facilities based largely on varying standards of space and walking distance for children of different ages. The plan is subject to refinement and change when neighborhood studies can be undertaken.

Because of the disparity between the needs of the younger and of the older children, there is need for two kinds of playground space: *junior*, for children 6 to 11 years of age, and *senior*, for ages 12 to 15. Wherever possible, both facilities should be combined on a single site. Since the older children may be expected to come from a greater distance, however, an interspersal of separate, junior play areas may frequently be advisable. The distribution of playgrounds is based on standards relating to travel distance and the adequacy of existing play space, as well as distribution of child population, traffic or other hazards, school locations, and various neighborhood determinants, when they can be recognized.

Play space standards refer to both minimum sizes for playgrounds and area for each child served. Every playground must provide for a variety of activities. For juniors, with the emphasis on playground apparatus and the individual, unorganized activity afforded by the sandbox and the wading pool, the area needed is not great; diversified interests can be provided on as little as 0.5 acre, or at the rate of 120 square feet for each child actually using the playground, whichever is greater. Senior children need the greater space required for such organized sports as softball, tennis, handball, and basketball; their minimum playground should have at least three acres and there should be at least 750 square feet for every active participant.

Accessibility is just as important as sufficiency of play space. Ideally, there should be a suitable playground within walking distance of every school-age child in Boston. For juniors, the distance should not exceed one-quarter mile, and for seniors, one-half mile. And, of course, the walk should be a safe walk, not crossing major streets or other hazards.

The probable demand for playgrounds is based on the distribution of child population contemplated for 1975 and the objective of a complete, public service based on the minimum standards. To meet this demand Boston has, for a beginning, its present system of more than 100 playgrounds. This system was evaluated with regard to space and location, a few years ago, by the City Planning Board, and the findings of that study were published in 1948.\* Even though the standards used at that time were lower† than those adopted for the current General Plan, the existing playground system was found to be seriously deficient in both space and accessibility. In addition, the nearly total lack of coordination between the school and playground systems was noted. Despite these handicaps, the present playgrounds represent, in the majority of cases, a valuable and well-nigh irreplaceable asset which must be used to the fullest extent feasible in the development of a future recreation system.

Additional use of existing facilities will be possible through effective coordination of school and recreation planning. The number of sites which can readily be converted from their present school use to playgrounds has already been mentioned. Similarly, existing parks often afford good opportunities for developing active play areas. And, as noted in the discussion of school planning, excellent opportunities for improving the recreation system will be found in the urban redevelopment program. The fullest possible use of all such advantages will give to the recreation plan that practical character which is essential to success.

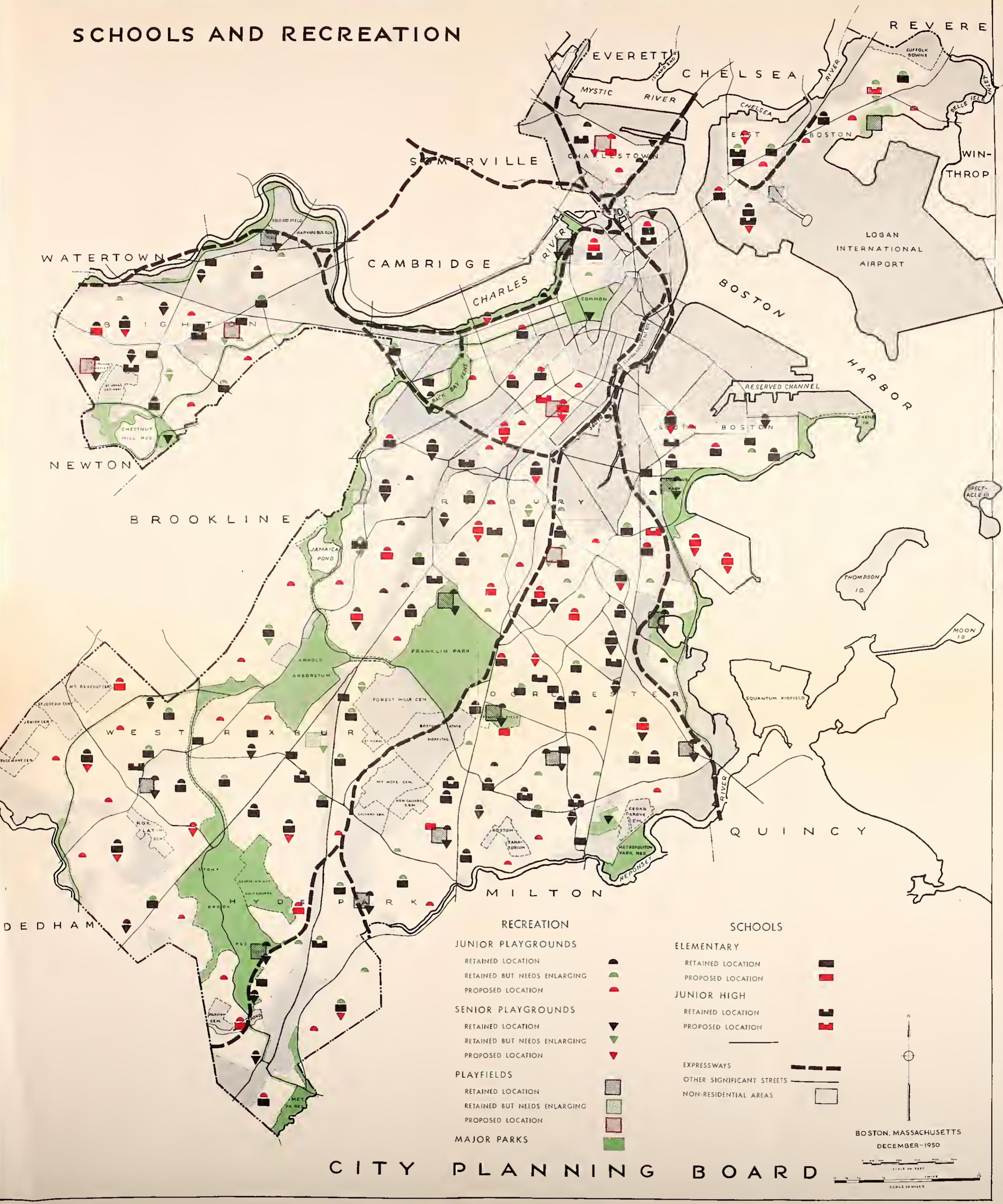
**Tot Lots.** This plan does not propose separate public facilities for children under six years of age. It is assumed that in lower density areas, this need will be met by the yards of individual houses. In higher density areas, it is the responsibility of developers to provide suitable

\* "Children's Playgrounds in Boston, An Evaluation of Space and Location," the City Planning Board, 1948.

† Standards were lower because they were devised for a much more limited purpose, namely, evaluation of the existing system, not design of a new, improved system.

# PRELIMINARY GENERAL PLAN FOR BOSTON

## SCHOOLS AND RECREATION





space. Occasionally, in congested sections, pre-school-age facilities may be incorporated into the design of children's playgrounds. In general, however, no big city has felt that it could afford the great cost involved in buying land for separate playlots in each block, maintaining them and supervising them.

**Playfields.** Large areas primarily for the active play of young adults are, however, an accepted public responsibility. The playfield is intended to meet this need and, in order to provide an acceptable variety of such interests as baseball, football, tennis, and hockey, should comprise an area of at least seven acres, or at the rate of one and one-sixth acres per 1,000 people, whichever is greater. Playfields should have easy accessibility, whatever the mode of transportation, and should usually be within one mile of the homes of their users. Because of their size and adaptability to location factors, playfields can often be used advantageously as buffers between residential sections and other land-uses such as industry, or can be developed in combination with playgrounds, or as parts of large parks. Economical operation and maintenance suggest grouping playfield facilities, wherever potential sites permit, into areas of between 20 and 30 acres.

The development of independent community interests within a large city such as Boston makes the recognition of the requirements of established and well-defined districts a factor in planning a system of playfields. The coordination of planning of both district high schools and playfields would constitute a logical further advance in this direction, especially since the playfield may also accommodate the high school athletic programs, but it is already too late, unfortunately, to secure the advantages of such coordination. The acquisition of new playfields in Boston will pose many difficulties besides heavy costs, so some ideals must be sacrificed in order to be practical.

At present, Boston has 43 areas\* which are capable of functioning as playfields, although in some instances enlargements are needed to meet the minimum space standards, and others are poorly located. Moreover, most of the best playfields are situated in the outlying sections of lower than average population densities. The principal need, therefore, is for playfields in precisely the locations where they are most difficult

to obtain. If the goal of accessible playfields in all parts of Boston is to be reached by 1975, heavy reliance must be placed on redevelopment programs and the improvement of present facilities and their coordination.

**Neighborhood Parks.** In addition to spaces for active recreation, city dwellers need public open space near their homes for rest and quiet enjoyment where building developments preclude the provision of such open space on the residence lot itself. The need is for walks suitable for baby carriages; benches for mothers to sit and talk, or for older people, or for couples in the evening; trees, for shade in the summer sun; grass, and flowers or shrubs where maintenance costs permit, to rest the eye and give freshness to the air. These things fill a real and serious lack in the urban scene, and indicate the essential characteristics of the neighborhood park.

Standards to govern the distribution of small parks cannot be devised as readily as in the case of playgrounds or playfields. This is because few, if any, of the determining factors are fixed. For example, the need for small parks would vary from one section of the city to another. This need is very great in an area like the South End where buildings often cover from 50% to 75% of their lots, streets carry a heavy traffic burden, industries and railroad lines abound, and there is a high density of adult population. Obviously, population density alone does not establish or indicate even the relative need for parks, a truism which will be even more apparent as the trend toward large-scale ownership and development of multiple housing continues, and better site planning principles are applied. Moreover, the very purposes of small park areas will change in their order of importance, from one set of circumstances to another. The objective may be, in one case, to provide a much needed place of rest; in others, to create a buffer or an attractive bit of landscape, perhaps as part of a playground or playfield; or a use for residual land which might otherwise be a blighting influence; or an effective separation of channels of traffic. And, finally, the chances for making small parks are dependent, it seems, as much on the whims of man and nature alike as on the conscious application of planning principles.

This lack of applicable standards makes impossible the presentation of even a schematic

---

\* *i.e.* with enough clear space to provide at least for one regulation baseball or football field.

diagram to show neighborhood park requirements for the future. The City Planning Board intends, as a future project, to identify neighborhoods within Boston and to plan in detail their further development and improvement. At that time it will be possible to give to the planning of small parks the detailed attention, knowledge, and practical value which cannot be applied now.

**Large Parks and Special Facilities.** Large parks are, by far, the most influential part of the recreation system, insofar as their effect on the city plan is concerned. The large park is an incalculable asset among the enduring values of any sizable city. Its functions are multitude; its beneficial potential perhaps not yet fully appreciated. It is quite possible, for instance, that when Boston's own major park system and that of the metropolitan area were first conceived some 60 or 70 years ago, it was not realized that the roads within those systems would comprise an important part of the thoroughfare network in a community of 2,000,000 souls. Today the needs of civil defense suggest a future value in major parks not heretofore contemplated.

Transportation and safety advantages, however, are not the principal objectives in park planning. The major park system of Boston, judging by the expressed intent of its design, probably was born of a popular reaction against a state of congestion whose ugliness was all too apparent. Escape from the pressures of city life which only the peace and beauty of nature can bring—this is the purpose and fundamental principle of the large park. And, though natural peace and beauty can assume many forms, they usually require reservation of space on a fairly broad scale.

Green areas, through purification of the atmosphere, are a health asset; they are valuable as buffers and boundaries to identify and solidify neighborhoods; and the transportation and aesthetic values of a parkway system are well known. Obviously, to secure the maximum advantages, distribution of park area must take the form of a coordinated system, often in combination with the larger areas intended for *active* recreation.

The amount and distribution of area required for a park system cannot be calculated with precision, through adoption of specific standards based on population density. Probably, in a completely urban community like Boston, a standard for park area should be in terms of a percentage of the total area of the city, with a provision that

distribution be reasonably equitable. The City Planning Board believes that at least 10%, or approximately 3,000 acres, of Boston's area should be in a park system.

Boston, corporate and metropolitan, can be justly proud of the progress made in establishing magnificent park systems during the past 70 years. In 1880 the city's parks consisted literally of the Common, Public Garden, and a few open squares. Following the example of New York, Bostonians had earlier seen the need of a broad, unified park system and, in 1875, accepted an act of the Legislature creating a Park Commission. This body, within a year, boldly proposed the extension of the Common and Public Garden through the Back Bay and Fens, and southward to include Jamaica Pond and West Roxbury (now Franklin) Park. These proposals are, today, the essential features of the Boston park system. They were based upon four major principles\* of park planning enumerated by the Commission in its report and which, with minor changes, would be perfectly valid now. Frederick Law Olmsted, Sr., brought these proposals to reality. Later, the efforts of others kept the park movement alive, and significant changes and additions were made. Boston is indebted to George Francis Parkman for his generous bequest in 1908 of a sum, "the income of which is to be applied to the maintenance and improvement of the Common and the parks now existing"; to Harvard College for an agreement whereby 167 acres of that institution's land will be preserved in park use as the Arnold Arboretum; to Charles Eliot for the imaginative concepts which later culminated in the great metropolitan park system and to numerous others whose contributions, though not as well known, are none the less significant.

Under the leadership of Boston, there was formed, in 1893, the Metropolitan Park Commission which began the building of the regional park system now comprising 12,000 acres and toward

\* "FIRST. *Accessibility*, for all classes of citizens by walking, driving, riding, or by means of horse or steam cars.

"SECOND. *Economy*, or the selection, so far as practicable, of such lands as are not at present income-producing property and would least disturb the natural growth of the city in its business and domestic life, and of those which would become relatively nearer the center of population in future years.

"THIRD. *Adaptability*, or the selection of lands possessing in the greatest degree the natural physical characteristics necessary for park purposes and requiring the least expenditure for subsequent development.

"FOURTH. *Sanitary advantages*, or the selection of such lands as would probably become unhealthy, if neglected or built upon."

the maintenance costs of which the City of Boston pays a substantial share. Though most of this system is outside of Boston, it is readily accessible and provides, in its rugged wilderness and ocean beaches, a contact with nature on a scale which is not possible within the city limits. Two significant recreation areas under metropolitan jurisdiction do lie within Boston, however, the Charles River Basin, an interior urban waterway, which, as such, has few rivals in its use for recreation, and the Stony Brook Reservation in West Roxbury and Hyde Park, a natural wooded area of 460 acres.

Scarcity of vacant land within Boston makes further development of large parks in beneficial locations a virtual impossibility. The

present system, however, was well conceived and provides all together nearly enough area to meet the city's total requirements, though there could be improvement in the matter of distribution. The practical difficulties in reallocating the park areas have caused the City Planning Board to follow a policy of retaining the present system virtually intact, as part of the General Plan. The Board believes that the planning of redevelopment areas will afford the best chance of overcoming the deficiencies in the park system. Such planning should include coordination of the basic objectives of the thoroughfare, recreation and redevelopment plans, resulting in the creation of green belts and parkways. These are details not within the scope of the preliminary General Plan.

## 5. A RECREATION PLAN FOR 1975

The Recreation Plan is included herewith in combination with the plan for schools. It embodies all of the principles and considerations discussed above. A brief statistical description is presented in TABLE XVI.

It is evident that the plan is intended to provide a complete system of facilities for active recreation, while proposing few changes in the major park system. Special recreational facilities, such as athletic fields, swimming pools and the like, have not been given detailed study as part of the work on the General Plan, because usually they lend themselves to incorporation within the

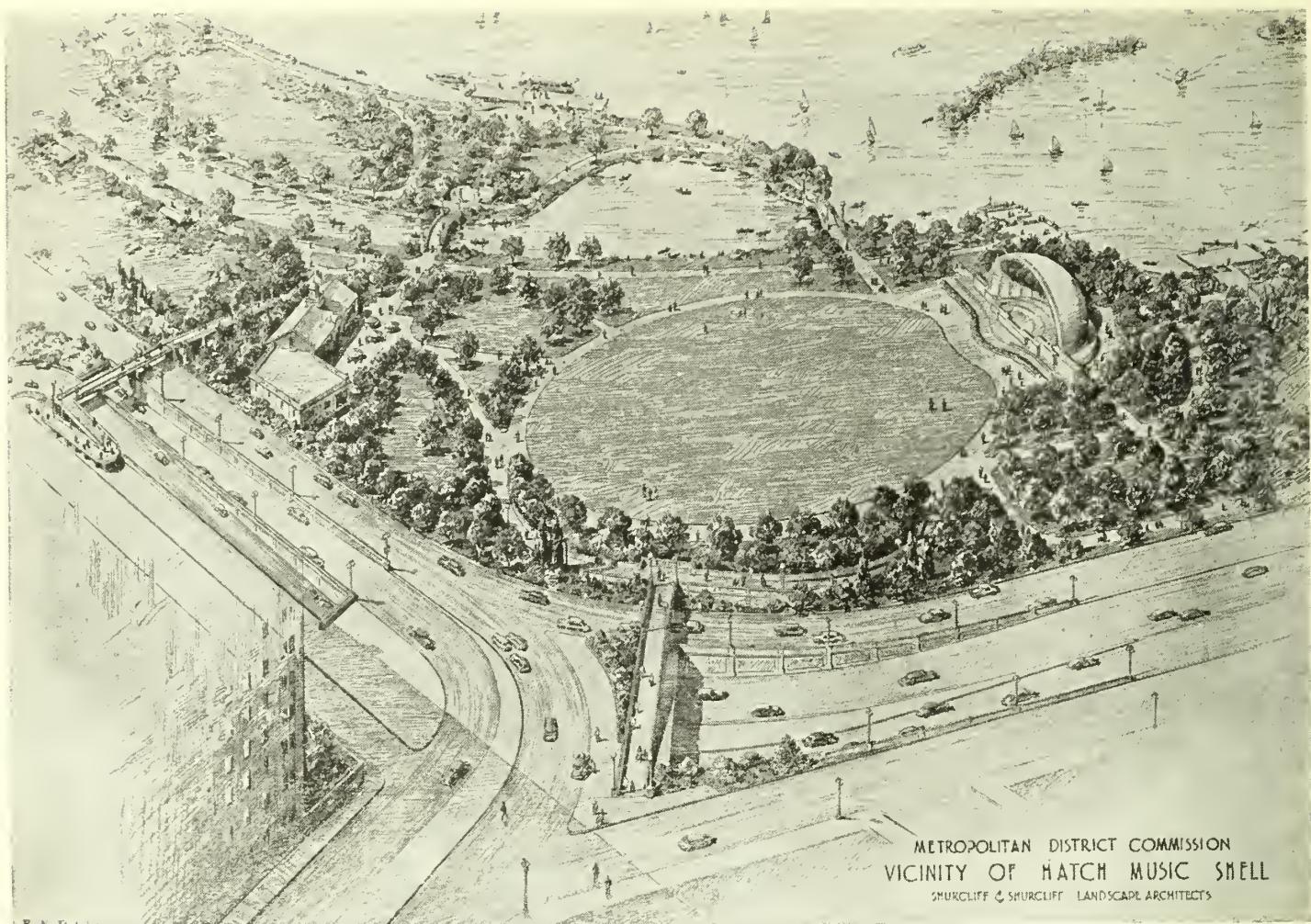
area of the larger parks and playfields. Similarly buildings for indoor recreation have been considered to be the type of facilities that can be accommodated within the general framework here established, rather than contributing to the decisions on the major structure of that framework.

Some of the specific changes worthy of mention would include:

1. Elimination of all of the larger playgrounds in Charlestown (except, possibly, William J. Barry Playground) in favor of a single new, central location. This proposal is contingent upon redevelopment of the

TABLE XVI.

TYPE OF RECREATION AREA	EXISTING AREAS			Additional Areas Proposed	Total Number Planned	LOCATION STATUS			APPROXIMATE AREA IN ACRES		
	Adequate	Needing Enlargement	Total			At a Separate Location	Combined With School	Combined With Other Recreation	Existing Areas	Proposed Areas (Minimum)	Total
Junior Playgrounds.	73	52	125	62	187	67	93	59	242	108	350
Senior Playgrounds.	38	9	47	19	66	5	27	60			
Playfields.....	14	3	17	5	22	3	6	19	274	47	321
Large Parks and Special Areas....	15	1	16	—	16	—	—	—	2,700	—	2,700



*Part of the Storrow Memorial Parkway, an example of how a parkway may be successfully coordinated with adjacent recreational facilities.*

district. The present playgrounds are poorly located and the sale of the largest one, at Sullivan square, has long been under consideration.

2. A permanent reduction in the size of Franklin Field, whose 60 acres are not entirely necessary in view of the proximity of other large open spaces. (A portion of Franklin Field has been devoted, since 1947, to temporary housing facilities.)

3. Development of the entire rim of Savin Hill Bay for recreation purposes. The present occupation of only one third of the shore by a use wholly inconsistent with the larger interests of the surrounding area is illogical.

And, though the idea is not included in the plan because analysis is incomplete, attention should be given to correlation of some of the recreation requirements of a redeveloped South End and the proposed belt expressway passing through the southerly part of that district. This would seem to be a unique opportunity to join

the Back Bay Fens with the South Boston Strandway by means of a green belt, with many advantages.

Effectuation of the recreation plan will not be easy or cheap. Though many of the proposed junior playgrounds can be established on discontinued school sites, acquisition of the necessary land, by and large, will be costly, and a complete system will add materially to the cost of operating the city government. Nevertheless, recreation facilities will, in the long run, be an economy for Boston, rather than a luxury. They will contribute greatly to the physical health and happiness of the people, an immeasurable, but real, value. More concretely, they will aid in stabilizing living values and accordingly property values; they will invite and protect private investment. They constitute a major weapon in the fight against blight, the fight to assure continued tax return to support municipal services. Increasingly in the future, as quality rather than size becomes the measure of a city, a well developed recreation system will be an asset to Boston in the economic as well as the social sense, by sustaining property values.

# IV. TRANSPORTATION

## 1. RELATIONSHIP TO THE GENERAL PLAN

The transportation facilities of the city are the vital links between its various parts—the channels of circulation that bring life to the residential, business, and industrial areas. Since the life of Boston is inseparable from the life of the whole metropolitan area, these channels of circulation pay no attention to municipal boundaries. They link the parts of Boston to the rest of the region, to New England, to the nation, and to the other parts of the world.

The goal of transportation planning is to provide, between any two points, a system allowing movement that is convenient, quick, safe and economical, whether it is people or goods that are moving, and whether they are moving entirely within the urban area, or from within or without. The continuing changes in the size, speed, characteristics and use of the different kinds of carriers demands constant change in the transportation

facilities, which in turn requires continuous fore-thought and planning.

Future changes in the transportation facilities of Boston have been planned heretofore by a number of independent agencies, at various levels of government: highways, transit, port, airport, and so forth. It is the purpose of this General Plan to incorporate and coordinate these different partial plans, relating them to each other and to the basic pattern of land-uses and population distribution. A number of authoritative plans have been accepted complete, making only such minor changes and shifts as seem to be necessary to fit in with the phase of the General Plan dealing with future land-use, which was not before these agencies when they were studying their facilities. The result is a comprehensive transportation plan which can soundly serve as a basis for programming and detailed design of particular improvements.

## 2. ELEMENTS OF A TRANSPORTATION PLAN

### STREETS AND HIGHWAYS

Streets are the transportation facility that most closely touch the life of everyone. They serve to move people—on foot, from home to school, store, work or bus-stop; in private cars, from home to shop or work, or to out-of-town destinations; in buses and streetcars, to and from many local points. They serve to move people for short distances and long, within the city or through it. They serve also to move goods, in trucks—home deliveries, or to stores and factories, or from pier to warehouse, or railroad to destination; local or long haul; little panel trucks or monster trailer combinations.

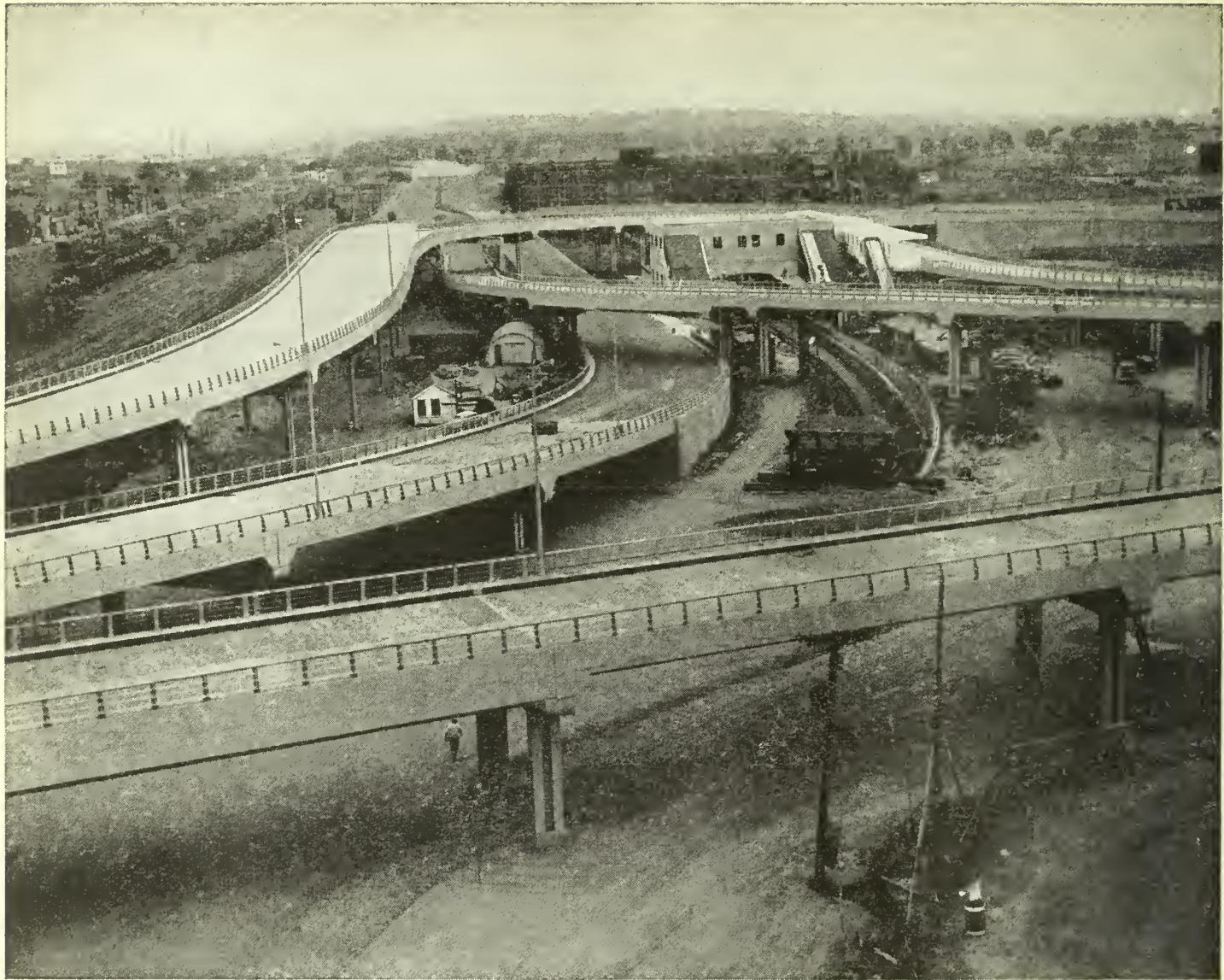
Much of our traffic dangers and congestion has come from trying to make the same streets do too many of these jobs at once. More and more, streets are being specialized according to their uses. There are roughly four types:

1. Local access streets, serving houses and apartments, or stores, or industry, entirely within one neighborhood.

2. Secondary streets, collecting traffic from local streets, serving short trips from one neighborhood to the next, feeding into major streets.

3. Major streets, carrying large traffic volumes, including trucks and transit vehicles, serving trips of a mile or more, crosstown or into town, and feeding the express highways.

4. Express highways, carrying very heavy traffic long distances at high speeds, serving to link major points within the metropolitan area and beyond.



THE EAST BOSTON EXPRESSWAY - LOGAN AIRPORT INTERCHANGE

*This is the first link to be completed in the Boston System of Expressways, which will eventually consist of inner and outer (Route 128) circumferential rings connected by carefully located radials.*

The planning problem is to rearrange the existing street pattern and build new parts so as to sort out the present confusion, and establish systems of each kind of street to serve rather than to conflict with the desirable land-use arrangements. Express highways, for instance, should not cut across small residential neighborhoods, disrupting their local community life, but rather should be so located as to act as protective barriers between residence and industry. Major streets should be so geared to school plans that they can serve as school district boundaries, so that small children need not cross them.

Most street planning up to this time has dealt only with the important arteries. The Whitten plan, prepared by the City Planning Board in 1930,\* proposed a comprehensive major

street program that guided much of the construction in the years following, and has formed the basis for later plans. The tremendous increase in the use of cars and trucks, however, has made obsolete all earlier ideas of traffic design, and brought about the still new idea of the express highway.

The growing realization of postwar highway needs culminated in the Master Highway Plan of 1948, prepared by a joint Board representing several public agencies.† It is a comprehensive

\* Report on a Thoroughfare Plan for Boston, prepared by the City Planning Board, Robert Whitten, Consultant; Boston, 1930.

† The Master Highway Plan for the Boston Metropolitan Area, submitted to the Governor by the joint Board (Commissioner of Public Works; Chairman, State Planning Board; Commissioner, Metropolitan District Commission); U. S. Public Roads Administration participating; Charles A. Maguire & Associates; DeLeuw, Cather & Co., and J. E. Greiner Company, Consultants.

express highway plan for the whole metropolitan area, the features of which appear on the Highways & Transit Plan opposite page 60. Having as its purpose the movement of cars, trucks, and buses into and out of, through, and around downtown Boston, it consists of the Central Artery (foreshadowed in the Whitten Plan), a belt route, and a series of expressway radials sweeping out to the metropolitan rim.

The ultimate effectiveness of this extensive express highway system, whose construction is already under way, depends upon progress on a number of other features of transportation planning. Existing streets, with necessary improvements, must serve as feeders and as supplementary routes. The capacity of many existing major streets must be increased, by resurfacing and traffic control measures, and in other instances by widening, as a last and most costly resort. Further limitations on parking can increase traffic capacity, as may further integration of the system of one-way streets. The city's Master Street Improvement Program initiated this year is a step in the direction of increasing the usefulness of Boston's arteries.

## PARKING

Equally essential to traffic improvement is an adequate system of off-street parking facilities. Costly highways making it easier to drive downtown would be largely wasted without space to store the cars at the end of the trip. It is increasingly clear that there must be even less, rather than more, curb parking permitted. Initial steps have been taken toward developing a system of public off-street parking: four garage sites have been purchased, one garage is built, and further action is in progress. There is urgent need to prepare, in conjunction with and related to the express highway plans, an extensive off-street parking program, which should be designed as a part of the more detailed land-use and development plans for downtown that should form a part of later detailing of this General Plan.

The solution to the parking problem is by no means confined to the downtown area. In fact, one of the most effective ways to relieve downtown auto congestion may well be the promotion and development of large parking areas at outlying rapid transit terminals. If such areas can become popular, they will do away with the otherwise inevitable need for some very costly downtown off-street parking and street widenings or other improvements.

Further, every major district shopping center in Boston would benefit from additional off-street parking, especially in the outer areas where the private car is increasingly used. This General Plan, by identifying these centers, serves to guide the later step of more detailed study of each such local parking problem, as part of the neighborhood and community planning that must be done to give effect to these generalized recommendations.

## TRUCK TERMINALS

Trucking is another major element of the street planning picture. Trucks are from day to day an ever more important part of the freight transport system. Their impact upon street traffic can, however, be reduced by the development of a union motor freight terminal, the advantages of which were presented in a City Planning Board report on this subject in 1947. During the three years that have intervened, the needs have greatly increased. Adequate locations now available should be acquired promptly, to forestall higher costs or conflicting construction. Exact locations should be detailed to tie in with access points to the express highways in order to relieve city streets of as many cross-country trucks as possible.

All these improvements in the system of main streets and heavy traffic facilities will have advantages over and beyond the bettering of traffic flow. The vast "conservation" areas and central residential areas of Boston are now deeply penetrated by through traffic, not only on main streets, but on narrow byways used as relief routes and short cuts. Re-establishment of tolerable living conditions requires eliminating through traffic from residential streets. The planned improvements to the major arteries will make possible further steps to reduce this blighting flow on minor streets — either by control measures or by actual barriers and interruptions to through traffic. Specific plans will form a part of the more localized studies that must follow this General Plan.

## MASS TRANSPORTATION

More people today use mass transit to get from place to place in Boston than use private cars. Improvements in transit become, then, important to even more people than express highways and parking. It would be clearly impossible to move everyone by automobile and equally impossible to provide storage space for the number



*Part of the MTA Plan for the future is this additional subway tunnel between Park Street and Scollay Square, designed to relieve a serious rush hour bottleneck. Besides the tunnel, there will be new entrances to Scollay station, a pedestrian passageway between Park Street station and the Washington-Winter-Summer stations, and additional platform space in the Park Street station.*

of cars that would be needed. However essential highway improvements may be, it is at the same time a matter of both public and private economy to continue to move as many people as possible by mass transportation.

To counteract the growing use of private automobiles, public transit must take steps to become ever more convenient, quicker, and more comfortable, and yet retain its advantages of comparative economy. The mass transportation system must also keep pace with other factors and trends of land-use and development.

Boston's present mass transportation consists of the commuter railroads and independent bus lines, and the publicly owned transit system, with its many miles of express service via subway, tunnel, and elevated, and even more miles of local streetcar, bus, and trolley bus lines, representing a colossal investment in fixed facilities to which the City of Boston has contributed heavily. The rail lines that serve the metropolitan district end at terminals inconvenient to many commuters, compared with the subways. The rapid transit, on the other hand, does not adequately serve the outlying cities and towns, and in some instances does not conveniently serve parts of Boston.

In 1945 and 1946 the Massachusetts Metropolitan Transit Recess Commission issued reports proposing certain extensions of rapid transit and other improvements, which are accepted as parts of this General Plan. For the most part, the proposals were predicated upon the use of railroad rights of way for rapid transit into Quincy, Dedham, Needham, Newton, and other suburbs. In

effect, this would reduce travel time to central Boston, supplying supplemental arteries of circulation to sustain the economic life of the downtown district and other parts of the city.

Currently planned and authorized construction by the Metropolitan Transit Authority consists of such improvements to existing lines as double-tracking certain subway sections, and replacing elevated structures with subways as shown on the plan opposite this page.

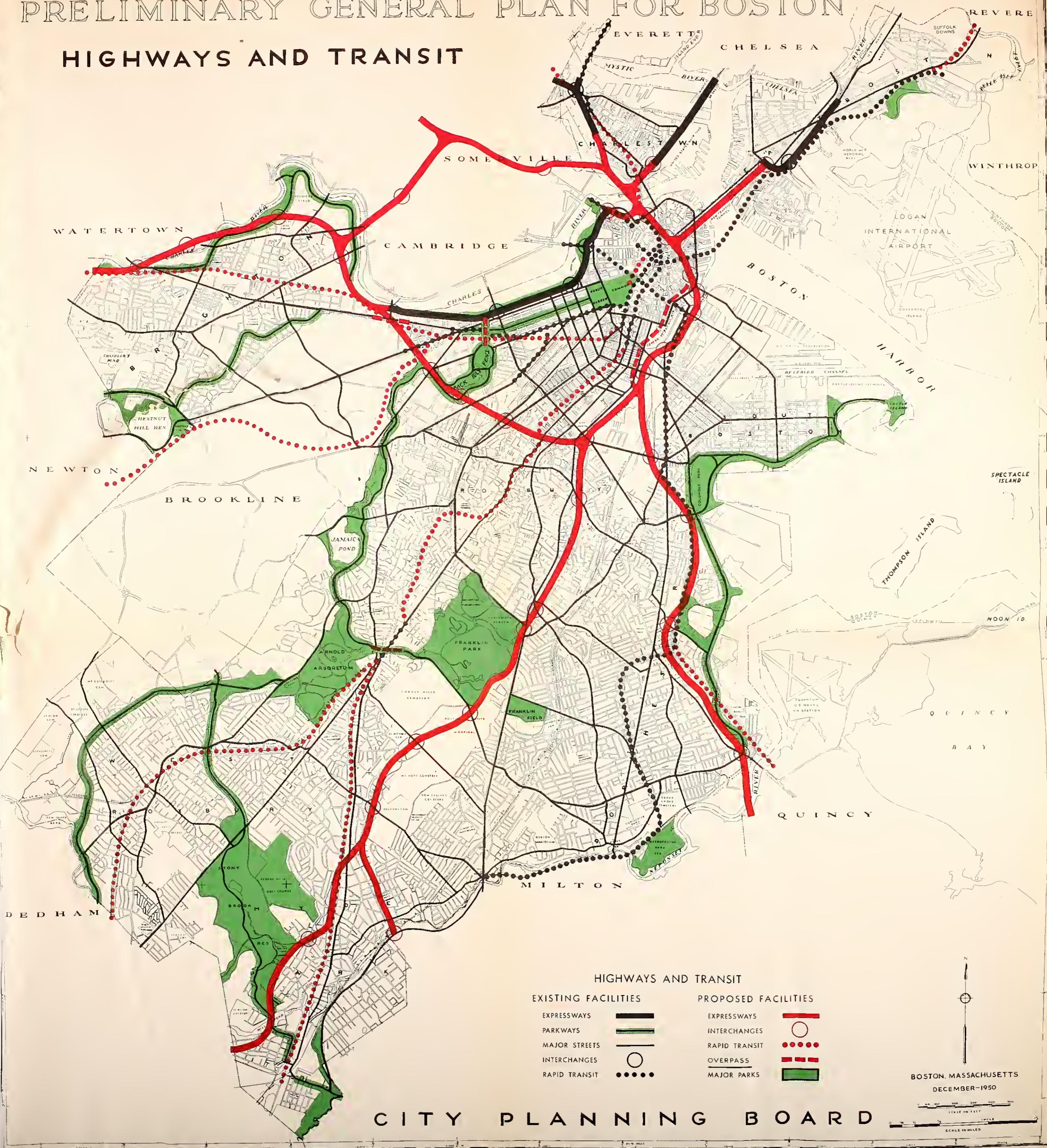
A part of transit improvement that does not lend itself to presentation on this type of map is the feeder service from local areas to the rapid transit by streetcar and increasingly by trolley bus or gas bus. Improvement of this service is just as important as the express lines; it is aided by betterments in the systems of major and secondary streets, whose detail should be designed for the requirements of the transit system. There should, in fact, be close collaboration by the street planning and the transit planning staffs with the city planning staff, in order to knit together the circulation features and the land-use factors of neighborhood development.

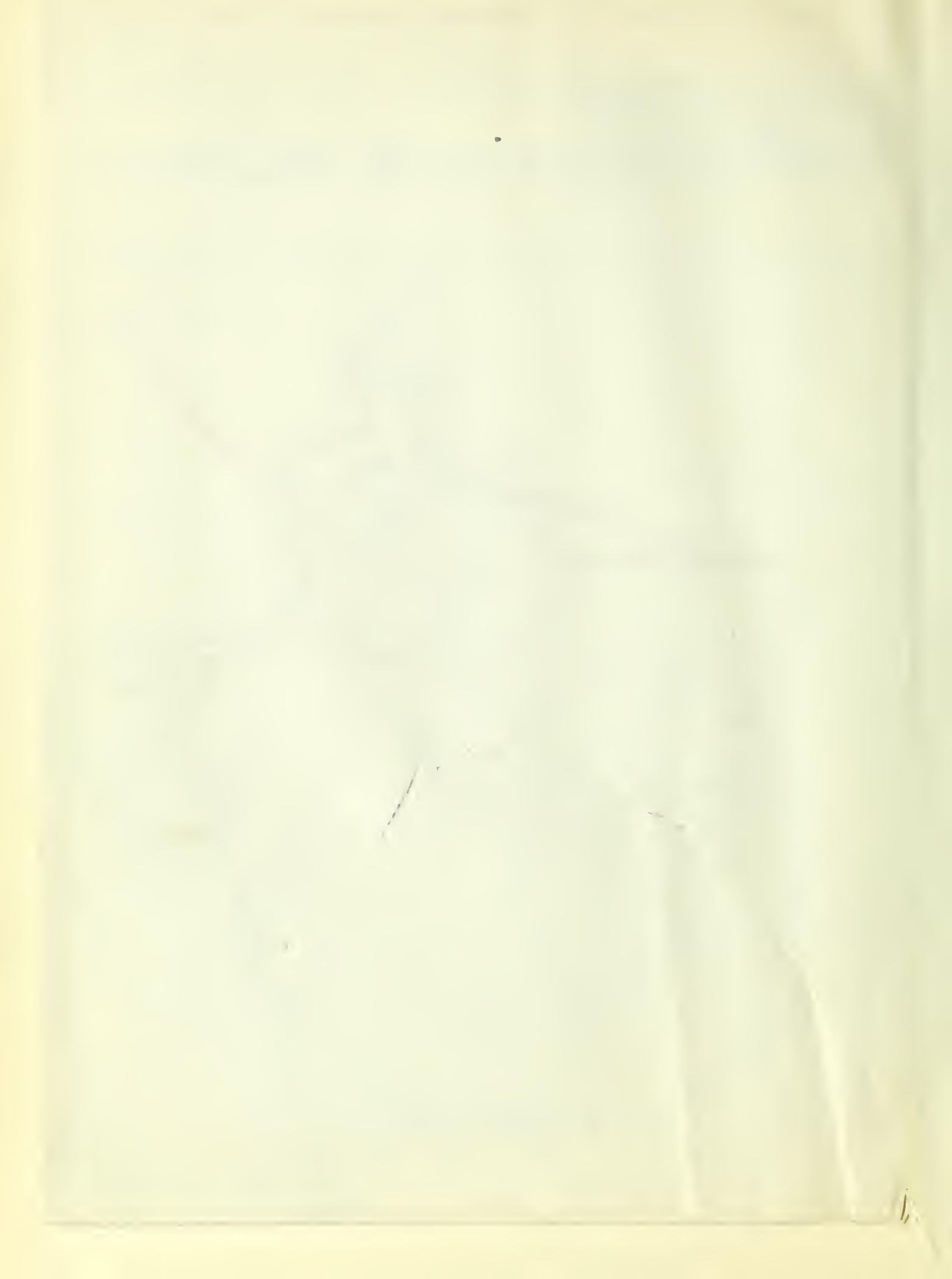
## RAILROADS, PORT AND AIRPORT

The physical locations of the railroad and port facilities are accepted, in this preliminary version of Boston's General Plan, as substantially fixed. The railroad lines are in the main established beyond revision. The harbor ties down the port. Both are essential to Boston's life, bringing in food, raw materials and other freight. Neither is as important for outgoing freight or transshipment as they used to be. Boston is no longer primarily a shipping city.

# PRELIMINARY GENERAL PLAN FOR BOSTON

## HIGHWAYS AND TRANSIT





Study of improvement of rail freight facilities, if the three-rail systems could be brought together to participate in framing and carrying out plans, might lead to possible modification of the systems of classification yards and other terminal facilities, resulting in substantial betterment to the community and substantial savings to shippers and receivers of freight. In the absence of this kind of collaboration, a design for sweeping changes would be futile. Establishing the basis for constructive work together in this direction must remain as a goal for future planning board operations.

One major element of rail freight handling, however, has been recently studied, and the recommendations for building a new wholesale food terminal on newly filled land in the South Bay are incorporated in this General Plan.\*

Water freight facilities are under the jurisdiction of the Port of Boston Authority, which has

embarked on a program of modernization to hold or recapture ocean-going and coast-wide shipping. Proposed improvements, such as the Hoosac pier, are included as a part of this plan. Most of the others are concentrated in South Boston, with a gradual abandonment of major shipping in prospect for the old waterfront along Atlantic avenue.

Boston's air transportation is concentrated at Logan International Airport, whose expansion is now in progress. Elements of the express highway plan are designed to provide service to this great asset of the air age, already nearer to downtown than the main airport in any other city, closer to Europe than any other metropolitan airport, and representing a vast and continuing investment of public funds of great economic value to the community. No other air transport facilities are included, within the City of Boston, as part of the General Plan.

### 3. CARRYING OUT THE TRANSPORTATION PLAN

The plans for various phases of transportation here consolidated into a single presentation are largely generalized and schematic, except for a relatively few projects that are very near the construction stage. The exact location and detailed design of each improvement, as well as the timing, rest with the agencies, most of them independent of the City of Boston, which have the responsibility for financing and construction.

Upon the City Planning Board, however, rests a responsibility for relating these designs to each other, and to the other aspects of the city's development, so as to serve best the total needs of the community. At the present time the Board has no authority to review or modify the plans of, say, the Port Authority, or the State Department of Public Works. Its coordinating function must be carried out through voluntary cooperation and persuasion, working with the responsible agencies as each project comes up. Since the final objective of every governmental agency is the service of the public, this situation poses no essential conflict of interest that cannot be resolved by understanding collaboration. It is, however, desirable that a procedure for this collaboration be established, which might involve at the least conferring upon the City Planning Board the right to review each

project design, and report upon its relationship to the General Plan, before the responsible agency can officially approve the project.

The bulk of the transportation improvements included in this report will be financed by State, Federal, or other nonmunicipal funds. This is entirely proper, since the new facilities will be metropolitan or even regional in their benefits, and since the people and businesses of the City of Boston contribute heavily through taxation to these sources of funds. There are, on the other hand, a number of transportation improvements which the city will have to finance from its own funds. These include local street widenings and improvements, development of the feeder streets leading into the freeway system, installation of traffic control facilities, and provision of off-street parking facilities. The City Planning Board, working with other city agencies, can contribute to the soundness of design and of relationship to the General Plan for these types of project. The Board also can exert an influence upon their timing, through its part in the preparation of the city's

---

\* The Wholesale Produce Markets at Boston, Massachusetts, by the Marketing and Facilities Research Branch of the U. S. Department of Agriculture, made at the request of the Massachusetts Department of Agriculture, the Commonwealth Markets Authority and the wholesale trade.

capital improvement program, which should be a continuing annual function. It is clearly vital that the timing and design of these projects should not only conform to the financial capacities of the city, and fit together with each other and with land-uses and population needs, but also mesh with the construction programs of State and independent agencies to create a progressively more efficient, integrated network of all types of transportation facility.

This consideration leads to the desirability of developing a coordinated joint capital improvement program, for all public agencies operating within the City of Boston. Such a program could not be official or authoritative within our present governmental structure. It could nevertheless be worked out in voluntary collaboration by the

many agencies concerned, and acting as an unofficial guide could contribute materially to public economy and efficiency. Spearheading the organization of this cooperative activity would be an appropriate function for the City Planning Board to undertake, if it were provided with staff resources adequate to handle this as well as much other urgent staff work, much of which has been discussed in this report.

As with any other phase of public business, marked progress toward carrying into effect the plans for improved transportation facilities depends not merely upon sound planning, engineering and programming, but also upon the progressive action of elected public officials bulwarked by the expressed will of an informed, alert citizenry.

## IN CONCLUSION

---

The General Plan presented in this report is rooted in the earlier work of the City Planning Board and numerous other public agencies, extending over many years. It has in general, therefore, a sound basis of confirmed facts and opinion, but with a resulting tendency toward conservatism. Indeed, fundamental change is proposed for only one fifth of the land area of Boston, over a 25-year period. Conservative plans represent, perhaps, all that can be expected of the planner who is often torn between the admonition to "make no little plans" on the one hand and a desire to be "practical" on the other. Practicality is recognition of limitations imposed by existing and well established circumstances — physical, financial, political, legal, and, above all, the so-called "human equation." It has been said that all human progress is made through compromise. The best plan, then, is not necessarily the one with the boldest look, but the one which promises most in terms of practical achievement.

The reader will, perhaps, wonder why this plan deals more in over-all solutions than in specific projects. In the view of the City Planning Board, however, such is the deliberately intended nature of a general plan. The Board is aware, of course, that effectuation of its broader principles depends upon a further expression in terms of a series of proposals, each limited to a directly realizable goal. This concept may be found in the urban redevelopment procedures emerging from the national legislation of 1949, wherein specific project plans are evolved through prior general and redevelopment area planning. The Board sees its future task as twofold: further study and improvement of the General Plan as such, and detailed planning within the individual components of the General Plan, both functional and geographical. The preliminary General Plan contained herein is thus the beginning, not the end, of the Board's planning program.

Boston must be understood as more than a geographical description of a mere 46 square miles of land and water. It is also a fabric of human relationships — political, social, and economic — woven by 2,000,000 people. It is not, cannot and should not be, a static structure, since human relationships themselves change, for better or worse.

The physical Boston of today is the visible record of generations, present and past. The job of the city planner consists largely of examining this record, in order to understand the underlying attitudes, habits, and abilities, and to suggest objectives for the future which will be more consistent with contemporary progressive thought.

It is the finding of this report that the present physical organization of Boston comprises a basically sound foundation to support a metropolitan superstructure of future social relationships on a grander scale than ever before. That this is so is a tribute to the abilities, energy, and forethought of all kinds of Bostonians. On the other hand, the General Plan shows a need of substantial alterations within the essentially sound framework. This indicates a failure of the community as a whole to keep abreast of advanced thinking.

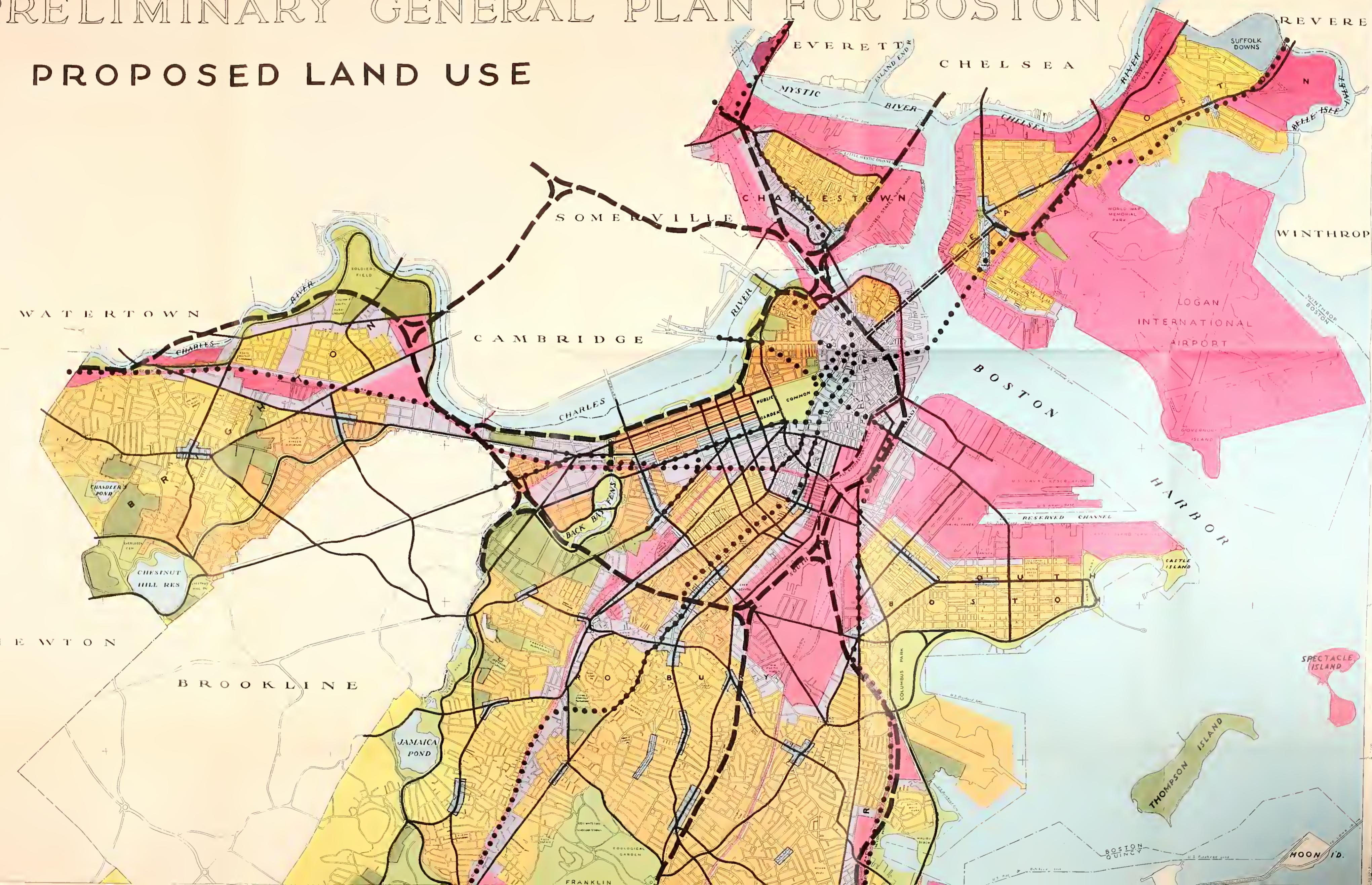
One of the principal purposes of a general plan, then, is to stimulate progressive thought on as broad a basis as possible. Progress toward the objectives of the plan requires a broad base of understanding and concern among public officials, the business community, citizen organizations, professional groups, and the public at large.

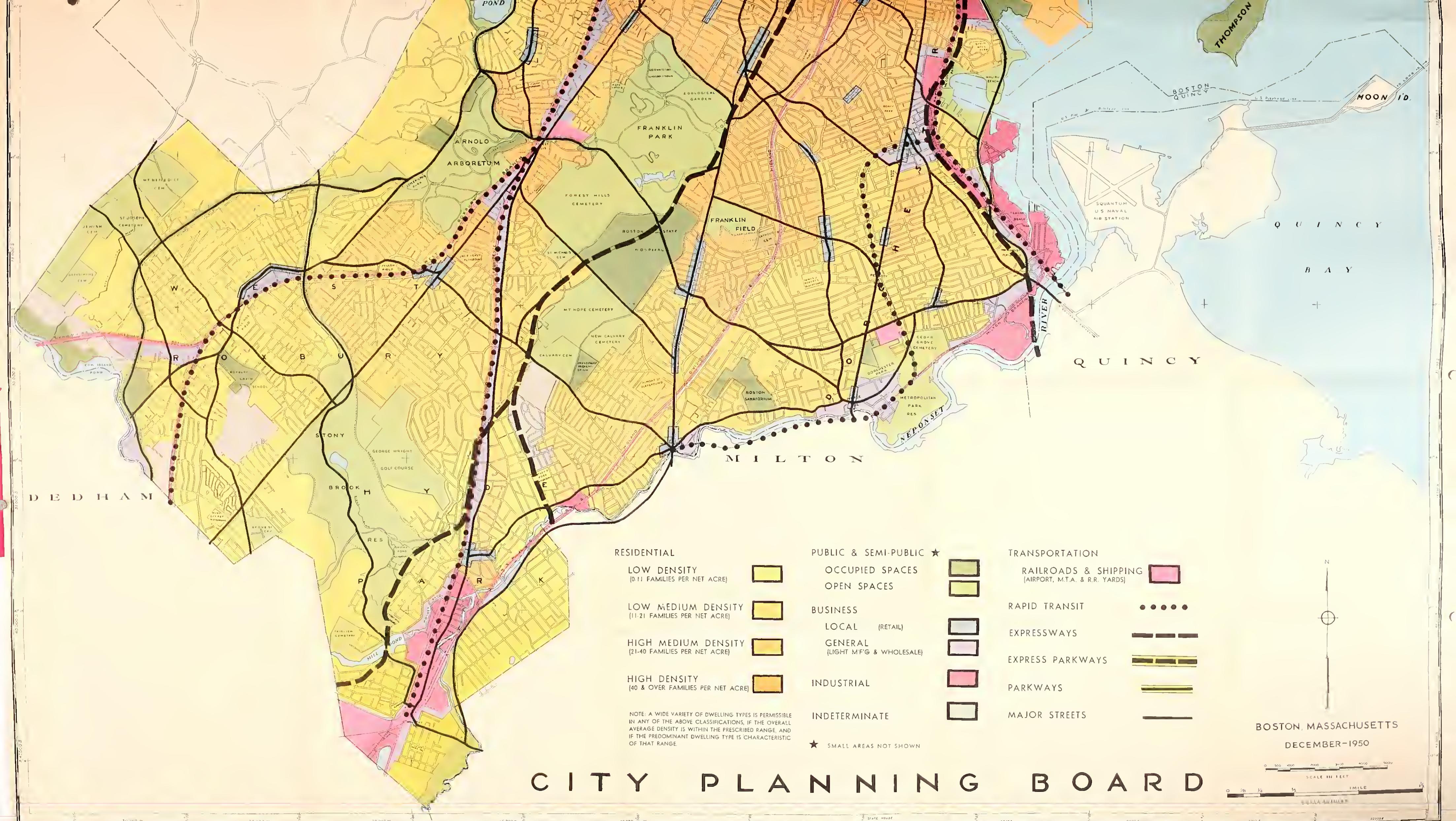
It is the hope of the City Planning Board that this preliminary General Plan will succeed in provoking widespread thought on the subject of desirable objectives for the future and the methods whereby they may be attained. To the extent that this happens, the Board will consider its work a success, the plan itself will be improved, and prospects for a better Boston will be enhanced.

CITY OF BOSTON  PRINTING DEPARTMENT



# PRELIMINARY GENERAL PLAN FOR BOSTON PROPOSED LAND USE





152











